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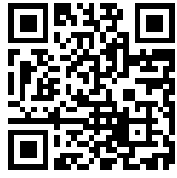

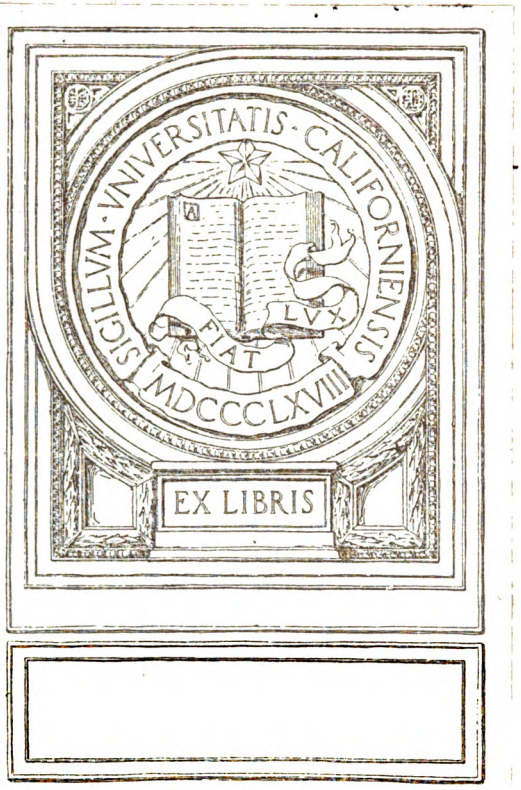

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A HISTORY OF THE TRANSPORT SERVICES OF THE EGYPTIAN EXPEDITIONARY FORCE

1916—1917—1918

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MAJOR-GENERAL G. F. DAVIES, C.B., C.M.G., C.B.E.
Director of Supplies and Transport, Egyptian Expeditionary Force, 1916–1918.

[*Frontispiece*

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A HISTORY OF THE TRANSPORT SERVICES OF THE EGYPTIAN EXPEDITIONARY FORCE
1916—1917—1918

BY
BREVET LIEUT.-COL. G. E. BADCOCK
C.B.E., D.S.O., R.A.S.C.
(LATE ASSISTANT DIRECTOR OF TRANSPORT, E.E.F.)

LONDON
HUGH REES, LTD., 5 & 7 REGENT ST., S.W.1
1925

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TO

G. F. D.

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Seldom, if ever, can The Royal Army Service Corps have been confronted with problems of Transport so difficult as those which called for solution during the advance of The Expeditionary Force through Palestine and Syria in 1917 and 18.

Deserts, defiles, hills, valleys, roads and trackless mountains, all had to be conquered; while climatic conditions included extremes of heat and cold, of drought and torrential rain.

Lieut. Colonel Babcock tells how the work was done.

I, who had the honour of commanding the Army, can testify to the colossal nature of the task accomplished; and to him and to the Royal Army Service Corps I owe a deep debt of gratitude.

No one who reads this History can fail to be proud of the achievements recorded; a triumph of organization and perseverance, unsurpassed in the annals of our Empire.

Allenby F. M.

Cairo.
24th Feb. 1924.

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FOREWORD

We read in the Book of Exodus that when the children of Israel were in bondage in Egypt, the taskmasters, after taking away their straw from them, decreed that the people should go and get straw where they could find it, but that the quantity of bricks to be delivered should be in no way diminished. During the Great War those of us who served in Egypt had also to a large extent to go and get our transport where we could find it, the demand in this case being that the needs of the Army should be met, regardless of the absence of such facilities for movement as existed in the larger theatre in the West.

Ever since the days when it is recorded that the chariots of Pharaoh "drave heavily," the going in Egypt has been difficult; and so far as is known the passing of the centuries has witnessed little if any diminution in the volume of sand to be negotiated.

A clear understanding of the enormous difficulties to be overcome is therefore necessary to an adequate comprehension of the methods whereby they were surmounted. In the history of that ancient land it is probable that no greater demand was ever made on the "ship of the desert" to carry freight across its native element, and the management of 40,000 burden camels alone was a gigantic undertaking. Side by side with this

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archaic form of transport there were introduced the most modern types of mechanically propelled vehicles; and so, with this strange blending of the Oriental and the Occidental, the demands of the forces were unfailingly supplied. To all who are desirous of acquiring a detailed knowledge of the manner in which the transport services of the Egyptian Expeditionary Force were organised and administered, of the improvisations introduced to meet the peculiarities of climate and terrain, and all the other conditions appertaining to a campaign in an Eastern theatre, I commend a study of the present volume.

WALTER CAMPBELL,
Lieutenant-General.

UNITED SERVICE CLUB,
December 1923.

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AUTHOR'S PREFACE

IT has been said that there are but two reasons for recalling the past—one is to award praise, the other to avoid if possible the repetition of mistakes.

It was my privilege during the Great War to have served from the start to the finish of the Egyptian Expeditionary Force; and being connected throughout with the Transport Directorate at G.H.Q. during those days.

I had the additional good fortune of being able to get out and about a great deal, and consequently saw more perhaps than fell to the lot of many others.

Improvisation in transport, as in so many other branches of the E.E.F., played a very big part. Fortunately for us, we had time in which to learn from our mistakes; others in years to come may not be as fortunate, hence one of the two main reasons for the publication of this *History of the Transport Services of the Egyptian Expeditionary Force*—viz. to avoid if possible the repetition of mistakes.

The subject-matter of this History has been divided into five parts:

I. Camel Transport.
II. Mechanical Transport.
III. Donkey Transport.
IV. Personal Reminiscences.
V. Officers, R.A.S.C., E.E.F.

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For the first mentioned I am entirely indebted to my friend Colonel C. H. Whittingham, C.M.G., D.S.O., who served from start to finish in the E.E.F. as Inspector, Camel Transport Corps. His early days of soldiering had been passed in the Grenadier Guards; in the South African War he obtained his Commission as a 2nd Lieutenant in the Durham Light Infantry; early in the 1900s fate led him to the Sudan; and in 1916, when I first met him, he was Inspector-General of Prisons in Egypt. He was an indefatigable worker, and in addition a great organiser and a great administrator—and a loyal co-operator.

No man is held to be indispensable for good or evil—it may be so; suffice to say that those of us who had to deal with transport problems in the E.E.F. would indeed have been in a sorry plight had we not had the services of this remarkably capable officer.

To him is due the credit for the formation and all subsequent success that attended that great transport organisation which will go down to history coupled with his name as the Camel Transport Corps of the E.E.F.

For the second part—Mechanical Transport—my very grateful thanks are due primarily to two officers who held temporary commissions in my Corps: Major E. A. Medley, O.B.E., and Major R. C. Haddon, O.B.E. They both held the appointments of D.A.D.T. (Technical) and D.A.D.T. in our Transport Directorate at G.H.Q. Minute attention to detail coupled with a wide vision made them what they were—invaluable to an organisation such as Mechanical Transport. And as the merit for the History of the Camel Transport

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Corps is Colonel Whittingham's, so too is the merit of the History of the Mechanical Transport Major Medley's and Major Haddon's, ably assisted as they were by Captain and Quartermaster B. W. Nicholson, M.C., R.A.S.C.

I have referred elsewhere to many advantages that accrued to those of us who served in the E.E.F., but here I should like briefly to state that we were peculiarly fortunate in that—

(*a*) Unlike British Armies in France, we were not a gigantic force; we only dealt in thousands, where France dealt in millions.

(*b*) Unlike Salonica and Mesopotamia, in early days we were a purely British Expeditionary Force, Salonica being an inter-allied one and Mesopotamia initially controlled by India.

(*c*) Unlike East Africa, we had none of their colossal difficulties of distance and lack of communications to contend with, consequently it has been comparatively easy to compile a record of what was done in the E.E.F., so far as regards Land Transport. There was no break in the continuity of things from start to finish.

The histories of all great wars are rightly concentrated in the doings of the fighting troops who took part therein; here and there mention is made of Transport or Supplies, but, so far as my limited knowledge goes, no separate treatise has ever been published to the world at large of the work of any Administrative Service. It is quite understandable: there is no glamour attached to them; their work is taken for granted, and they seldom, if ever, appear in the limelight of history, unless, through their breakdown, some first-class catastrophe occurs!

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Modern warfare has become somewhat complex —mobility has become the first principle of war, and mobility in turn is primarily dependent on transport.

Your fighting troops may be the finest in the world, but unless they are kept regularly, adequately, and punctually supplied with all the paraphernalia requisite to modern war, of what use can they be ?

Not for one moment would I maintain that our Transport Services in the E.E.F. were perfection, or that they in any way constitute counsels of perfection. We made mistakes innumerable, but they were honest mistakes, due to lack of experience, and certainly not due to lack of unceasing hard work on the part of executive Transport Officers and other ranks of the R.A.S.C.

A principle, after all, is but the crystallisation of experience, and it is solely to recount our experiences in the E.E.F. in the honest hope that such may not be devoid of interest and of value to others who may chance to read them that this record is compiled.

As I have stated in that portion of this book that deals with Officers and Other Ranks, there was a total of 1,094 officers, 17,817 British other ranks, 2,725 Indian Personnel, and 32,744 Egyptian Personnel (grand total, 54,380), serving in November 1918 with the R.A.S.C. of the E.E.F.

Of the first two categories, over 75 per cent. of the officers and over 90 per cent. of the British other ranks were " duration of war " personnel, and any tribute that I could hope to pay would be totally inadequate to convey even a fraction of the work they accomplished. One and all they

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merit claim to the motto, "Quod facio valde facio."

Out of our Transport experiences in the E.E.F. there emerge certain well-defined principles in regard to transport generally and Mechanical Transport in particular:

1. Centralised control.
2. The pooling of Transport.
3. The retention of a Reserve.

In conclusion I desire to record my profound gratitude to Field-Marshal Viscount Allenby, our Commander-in-Chief in those great days of 1917 and 1918, for that most generous preface he has so kindly written for this book, as well as to Lieutenant-General Sir Walter Campbell, our D.Q.M.G., for his.

The Corps which I am privileged to belong to can never hope to serve under more favourable conditions than in the days when it had the honour of forming a part of Field-Marshal Viscount Allenby's Expeditionary Force in Egypt, Sinai, Palestine, and Syria during the last and greatest of all the Crusades.

G. E. Badcock,
Brevet Lieutenant-Colonel, R.A.S.C.
(*late A.D.T., E.E.F.*).

May 1924.

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A HISTORY OF THE TRANSPORT SERVICES OF THE EGYPTIAN EXPEDITIONARY FORCE 1916-18

PART I

CHAPTER I

FORMATION OF THE CAMEL TRANSPORT CORPS

TRANSPORTATION in relation to the needs of an Army during an extended period of warfare was probably never more thoroughly understood in its significance or tried in power of endurance than during the operations in the various theatres of the Great War.

Having regard to the adverse conditions imposed upon Military Transport as a whole in Sinai-Palestine and Syria, it may perhaps be claimed that on few other fronts were its difficulties greater than in the theatre of war in which the Egyptian Expeditionary Force operated. The sand of the desert, the rocky hill-passes of Palestine, were but two of the many abnormal conditions under which it laboured.

The impossibility of taking wheeled animal transport across the desert in sufficient numbers to maintain an Army is obvious, even with waggons

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fitted with specially constructed sand tyres for desert work.

The only alternative course, then, for an efficient system of desert transport was the employment of the Camel.

During the first six months of the year 1915 the Military Authorities had hired, through the Ministry of the Interior in Egypt, between 1,000 and 1,500 camels, and nearly 1,000 Egyptian camel drivers for service with the troops in the Canal Zone, which extended from Port Said to Suez.

This organisation was subdivided into four divisions, with a total Officer Personnel consisting of four Inspectors and twenty-three Sub-Inspectors, whose services were lent at short notice by the Egyptian Government or local British Administrations in Egypt. The work performed consisted of the transport of rations and water from supply depots to the various units stationed along the Suez Canal and for the outposts on the east side of the Canal. In these days there was no road between Ismailia to Port Said: only the railway —and desert.

Possibly because this Hired Camel Transport was performing satisfactory work, the Military Authorities in Egypt did not then consider the question of forming a regular Camel Transport Corps; and following the unsuccessful attack by the Turkish Army on the Suez Canal at Serapeum and Toussum in 1915 and the subsequent period of inaction, most of the hired camels were returned to their owners. In this way the strength was reduced in March 1915 to approximately 500 camels, with a proportionate number of camel drivers.

In December 1915, however, orders were given

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by the Force in Egypt for the raising of two Camel Transport Corps, each Corps to consist of 10,000 camels, and it was decided that each Corps should be divided into Companies, with five Companies to the Corps. Later, the two Corps became merged into one under the command of Colonel C. H. Whittingham, C.M.G., D.S.O., with the title of Inspector. The companies were designated by letters in alphabetical order, allotted as companies were formed.

The establishment of a Company was as follows:

British Officers.	British N.C.O.s.	Egyptians.	Camels.	Horses.
1 Officer Commanding 1 Adjutant 1 Quartermaster 1 Veterinary Officer 1 Medical Officer 5 Section Officers	5 C.S.M.s 5 C.Q.M.S.s	1,168	2,020	20

The Hired Camel Transport Corps, in existence before December 1915, at this time had its Headquarters at Ismailia. Its strength was 800 camels, fully equipped with burden saddles, head collars, etc. This number was brought up to a total strength of 2,020 camels with the personnel shown in the above establishment, and was called "A" Company.

The formation of the Corps began at Ein el Shems, near Cairo, in December 1915, where No. 1 Depot was established. By the middle of September 1916 thirteen Heavy Burden Companies had been formed and were on service. This was no easy task, for it may be said at once that in past campaigns where the camel had been used as a means of transport, he had not proved entirely satisfactory. In the campaigns of the E.E.F. the

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camel has travelled to and over places impossible for most other forms of transport; yet he is a delicate and difficult animal to work, and casualties have always been high. In the Desert Column in 1884–5, of the 7,050 purchased, 4,024 were lost, sold, died, or destroyed; and of the 3,026 that remained, only 1,262 were effective after three months' work. In one of the Central Asian campaigns of the Russian Army, for instance, a force under General Skobeleff, with a transport of 12,000 camels, returned after some months with one camel only; and in our own Afghan campaign of 1879–80 we lost 70,000 transport animals, of which a high proportion were camels, the necessary numbers of which could hardly have been maintained for a longer period.

The problem of obtaining large numbers of camels and their working equipment, at short notice, involved immense labour, and the services of those appointed by the Egyptian Government to purchase the animals merit a mention here.

The difficulty also of engaging camel drivers, owing to the natural distaste of the Egyptian for any form of military service, was not easy to overcome.

With the continued advance of the British Forces into Palestine, it was necessary to move No. 1 Depot from Ein el Shems. This move was made early in 1917 to Kantara, where the Depot remained until February 1919, on the demobilisation of the Corps. In June 1917 an advanced Depot was established first at Rafa, and subsequently moved up to various points which had been captured in the advance to Jerusalem and Jaffa, until in April 1918 this Depot—known as

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No. 2 Depot—was settled at Bir Salem, near Ludd. It remained there until November 1918, when it was transferred to Ein el Shems, Cairo, for the purpose of carrying out the demobilisation of British and Egyptian Personnel, and the transfer of the camels to the Remount Depot, Helmieh, where they were sold.

Between the date of the formation of the Egyptian Camel Transport Corps in December 1915 to that of demobilisation in 1919, approximately 170,000 camel drivers and 72,500 camels saw service in the Corps.

The tributes paid by Field-Marshal Viscount Allenby, our Commander-in-Chief, were generous in appreciation of the arduous duties successfully performed by the Corps.

In his despatch dated September 18, 1918:

"Egypt has provided Transport personnel, drivers for the Camel Transport Corps, and men for the Egyptian Labour Corps in large numbers, in addition to several units of the Egyptian Army. These have all done work which, though unostentatious, has been of great value. During the operations in the hills of Judæa and of Moab, the troops often depended for their supplies on the Camel Transport Corps. The drivers displayed steadiness under fire and devotion to duty in the face of cold and rain, which they had never experienced previously."

In his despatch dated October 31, 1918:

"The Camel Transport Corps has rendered valuable services, which have greatly aided in the victorious campaign."

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Lieutenant-General Sir H. M. Lawson, who had come out to Egypt in 1917 in connection with man-power, reported as follows:

"I wish to record my admiration of this unique creation and of the great results achieved in it. The Corps seems very well organised, the personnel is smart and well disciplined, whilst the camels look wonderfully fit, with a very low percentage of death or sickness."

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CHAPTER II

PERSONNEL OF THE CAMEL TRANSPORT CORPS

(*a*) British

The choice of an officer to command what was known would become an important executive unit of the Service was at once a difficult one. For the essentials demanded were:

Organising ability (the Corps had yet to be formed).

Administrative capacity.

Wide experience of military matters.

A sound knowledge of camels, camel management, and their working possibilities.

A knowledge of the Egyptian native and his language.

The officer whose services we had the great good fortune to obtain was Colonel C. H. Whittingham, C.M.G., D.S.O., Inspector-General of the Prisons Department in Egypt. His work and his loyal co-operation are beyond praise.

For the task he was originally given the rank of Lieutenant-Colonel, with subsequent promotion to Colonel. His difficulties at the outset were shown in a report by him in 1916:

"I had had a long experience of working the riding camel, but practically none of the transport camel. Of the other officers who joined at the

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formation of the Corps, one had had six months' experience with the Hired Camel Transport Company, and one other a month. The first companies formed were officered by officials who were lent by the Egyptian Government and by gentlemen established some years in Egypt in business; and though they had no military experience or knowledge of camel transport, they had the advantage of knowing the language and the Egyptian.

"A year's experience has proved that for the successful working of transport with Egyptian camel drivers a knowledge of this kind is essential. The O.C. Company and the Adjutant must have local experience. Of course, officers with these qualifications were not available at the start; they lacked military training, but yet were able to get work done. Out of 170 officers serving with the Corps at present, 92 have been recruited locally, and it is to them we must look for the future. With one exception, every senior officer who has been brought in has, owing to his lack of knowledge of local conditions, been unsuccessful, and the efficiency of the Corps has at times suffered considerably; and even with junior officers "placing" of them with companies has to be carefully watched. During the recent unrest among the Egyptians owing to irregular recruiting, in every case the discontent has appeared with the Section on detachment with officers who have been unable to make the Egyptians understand their position. If the Corps continues, conditions will, of course, improve with experience, especially now that service is under more normal conditions, and we have classes of instruction, including a school for the teaching of colloquial Arabic.

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"In the formation of the Corps I was helped to such an extent by the officers locally recruited and officials of the Egyptian Government (English and Egyptian) that I feel bound to mention the circumstance in the hope that their services may be officially recognised.

"The actual work of organising was exceptionally heavy, and the only trained soldier that could be sent to assist was a Conductor of the Indian Ordnance (a trained Staff Clerk), who acted as Quartermaster and Adjutant and whose services were invaluable. No trained N.C.O.s were available, and clerks were provided from untrained class 'B' Personnel.

"N.C.O.s not being available from the Force in Egypt, they were eventually obtained from the Australian Imperial Forces. These N.C.O.s were exceedingly useful; they worked hard and have turned out very well; many of them have now received their commissions."

The question of officering the Corps presented innumerable difficulties, as indicated in Colonel Whittingham's report. For few of the first officers had had previous military training or knowledge of military transport in any form.

The following officers were appointed as Company Commanders of the first five Companies (A to E) of the C.T.C.:

A Co., Major S. S. Flower.

B Co., Captain W. E. Peel (now Lieutenant-Colonel, D.S.O.).

C Co., Major M. Moberley, D.S.O.

D Co., Major D. Blake.

E Co., Captain J. Farr.

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Captain A. de R. Gordon (now Lieutenant-Colonel, D.S.O.), Ministry of Agriculture, Cairo, was appointed permanent Veterinary Officer of the Corps in December 1915, with four Egyptian Veterinary Officers to assist him.

Of the above-mentioned officers, Lieutenant-Colonel W. E. Peel, D.S.O., and Lieutenant-Colonel A. de R. Gordon, D.S.O., served continuously from the formation of the first five companies in 1915 until the demobilisation of the Corps in 1919.

The following is a classification of officers who served in the C.T.C. between December 1915 and the date of demobilisation:

A.	Egyptian Government Officials . .	16
	Commissioned locally . . .	87
B.	Attached from R.A.S.C. . . .	111
	Transferred from other units . .	135
C.	Colonial Forces	70
	Total	419

The Camel Transport Corps became an accepted unit of the Forces in Egypt; its officers were given commissions, and their names duly appeared in the *Gazette*. They included many troopers from Australian and Yeomanry units who had already seen service in Egypt, as well as many Government officials and civilians. Each Company had a Captain (Commanding), an Adjutant, a Quartermaster, and five subaltern Section Officers, with a Veterinary Officer. The officers recruited locally were granted local and temporary commissions with the rank of 2nd Lieutenant, while

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officers attached or transferred from other units retained their ranks.

British N.C.O.s.—Volunteers were called for from units of the Australian Imperial Forces stationed in Egypt. Of those who reported for duty, 90 per cent. had no knowledge of either the Egyptian or his language, and they attended the Arabic classes which had been formed. Excellent reports were obtained of their progress in the Corps (i.e. knowledge of Arabic and camel management), and of the number who subsequently obtained commissions, six became Company Commanders.

Method of Promotion of N.C.O.s.—N.C.O.s taken on the strength of the Corps between December 1915 and March 1916 were posted (irrespective of permanent rank) as Company Sergeant-Majors and Company Quartermaster-Sergeants to companies then forming or already in the Field. At a later date all N.C.O.s desirous of transferring to C.T.C. were required to serve a probationary period of one month before being posted definitely to the Corps. This period was usually spent at a depot, and at the expiration of a month a report was rendered as to suitability for service with the Corps. If found suitable, rank was given one step higher than that held at the time of reporting. Later a seniority roll of N.C.O.s was drawn up. A list of N.C.O.s in order of seniority was sent each month to Company Commanders concerned for their remarks as to N.C.O.s' suitability for further promotion; and as favourable reports were received, promotions were published in Corps Routine Orders.

In the following table is shown the numbers of N.C.O.s who joined from other units, and

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where commissioned, the numbers of those commissioned:

	Joined.	Commissioned.	
Anglo-Egyptians . . .	3	1	
Attached from R.A.S.C. .	208	7	26
Transferred from other units .	163	19	
Colonials	153	63	
Totals . . .	527	90	

(*b*) Egyptian

Personnel: Egyptian Camel Driver.

Camel Transport Corps

December 1915—December 1918

Casualties to Egyptian Personnel

Average number on service . . .			25,000
Average effective strength . . .			22,500
Average number in hospital . . .			2,500
(*a*) Killed	163		
Died of wounds	59		
Died of disease	4,010		
			4,232
(*b*) Wounded	1,458		
Missing	78		
Prisoners of war	66		
			1,602
Total			5,834

Approximate number of drivers who passed through the Camel Transport Corps . . . 170,000

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The Egyptian and his Value in the Camel Transport Corps

The ordinary Egyptian camel driver asked to estimate the Englishman and his value in the C.T.C. would lie cheerfully and magnify him for ever; and were one to tell the whole truth and nothing but the truth of the Egyptian and his value, one would toil for ten years and be called liar at the finish! I know something of the conditions in and under which he worked, his difficulties and our own; I know the spirit of the Corps and what was done; but the men themselves were inscrutable and their value far below the surface.

The first recruits were volunteers, which is to say that of every three, one came to avoid the Police, one was sent by the Police, and one was a respectable wage-earner. Their hire was at seven piastres per diem, their term of service undefined, their army allowance one blanket. These were the men who marched to Sollum and who served in Sinai as far as Romani. They were pioneers, and as such, great men, for the Egyptian loves to follow, not to lead. Moreover, in those early days there were several reasons for refusing to serve or for desertion later. The belief in a Turco-German victory was general in Egypt; there was the inherited national hatred of any military service, although once serving the Fellah is not unhappy. There was the counter-attraction of the Egyptian Labour Corps by that time in full swing. The casualties to B Company at Katia and Dueidar early in 1916 were severe and unexpected, while the Western Desert operations were a heavy trial to the still youthful C.T.C.

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The second class enlisted by the E.L.C. Recruiting Commission for three-month periods was a failure. The men had not time to settle down to useful service before their period expired, and when there were delays in the arrival of reliefs, the drivers, still suspicious of our honourable dealing, became restless and in some cases made open trouble. Against this, an attempt was made to supply men enlisted for the duration of the War, but it became clear that the conditions had not been properly explained to the men when they signed on, and the C.T.C. authorities refused to be a party to the system. From that time a C.T.C. Commission recruited its own drivers until the whole matter of Egyptian labour was taken in hand by a Directorate at G.H.Q. The service was then fixed at six months; Raises drew nine and the Bash Raises twelve piastres daily.

In the earliest days recruits would come immediately under the command of an officer whose previous experience of camels was limited to avoiding them in the streets or passing them by at the Zoological Gardens. He more often than not had no knowledge of the Egyptian countryman, and, with very few exceptions, knew only the imperative mood of an Arabic verb; sometimes he knew no verb at all, and a fellow-feeling provokes sympathy with the Lance-Corporal of three days' standing in the Corps, who was heard, as he marched through a Judæan night in command of ten camels and four men, apostrophising his charges: "I am a Lance-Corporal, I am, and I am like an officer to you! and I intend to be treated as such, do you understand?" "Hadir, Effendim," replied the leading driver. "Don't answer me

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back," shouted the Corporal. You may well wonder with white personnel who had little Arabic and less camel knowledge, and with Egyptian Fellaheen who spoke no English and had to unlearn almost all the camel lore they knew, how the C.T.C. ever became an efficient unit. The answer lies in the iron hands of the Commanding Officer, who welded East and West together, hammering military discipline and camel management into both, and only thus were they beaten into shape and kept there to the end.

As for the men themselves, there are several classifications of Egyptians as known in the C.T.C. You may divide them into men who can and cannot see at night; or you may grade them by colour from yellow to black; officially they are classed as Medical Officers, Medical Orderlies, Native Batmen, Veterinary Orderlies, Sanitary Squads, Clippers, Saddlers, Bash Raises, Raises, and Drivers, attested and unattested. Take, therefore, the official classification:

Medical Officers are lonely men misunderstood by British ranks and openly suspected by camel drivers. They live in tents when other men are in bivouacs; they care for nobody, no, not they, and nobody cares for them.

Medical Orderlies draw British rations and sell Ideal milk to sick drivers; they are entitled to a riding camel when a company is on the march. Ungodly and flourishing, they seldom come to a fearful end.

Native Batmen are: (*a*) specially enlisted, (*b*) promoted from the ranks. (*a*) is black and has cuts on his face, (*b*) may be anything. (*a*) wears his identity disc on his wrist, (*b*) round his neck.

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Both draw Egyptian and live on British rations. (*a*) continually bickers with (*b*). Both give more trouble than either is worth.

Veterinary Orderlies draw princely salaries without earning them. Originally recruited on account of their black faces, which do not easily show successive layers of mange dressing, latterly they have been co-opted, and for an occupation cook each other's food.

The Sanitary Squad is an institution for the old and frail, the young and tender, the sightless and the imbecile; the work none the less is important, interesting, and highly sought after. Of several Egyptian notables who have filled the office of Rais Sanitary, perhaps the most distinguished is Zaki, leading Juggler of the Metropolis. After a long and honourable career he was found out, discharged with ignominy, and is now juggling again. The Sanitary Squad has done much excellent work and has added two words to the Arabic tongue, of which one is "Rubbish."

Clippers are artists for a daily consideration of fifteen piastres. With an instrument, the foster-parent of the modern lawn mower, they can accomplish the finished product of the studio or the barber's shop. They are skilled tradesmen, *raræ aves*, and have all the conceits of such.

Saddlers are very human. C.R.O. 1205, dated 10/4/17, put the situation into a nutshell:

"Saddlers should always commence work at 6 a.m. and will work when possible under the superintendence of the Q.M., who must keep a work book showing the amount of raw material issued and the daily work done. The daily work

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should not (except in case of emergency) be distributed to Sections before 5 p.m., but as it is finished put on one side, and so be available for inspection at any time during the day."

The foregoing infers that saddlers, like other men, do not of their own accord start work at 6 a.m., do not in fact start at all unless the Q.M. is shouting at them; it suggests that more raw material is expended than the number of saddles repaired can account for. That C.R.O. ended the confidence tricks and the ingenious accounts of saddles received, repaired, and reissued; it made the saddlers' shops unhappy hives of industry; . . . which was its intention. Like their humbler brethren of the Sanitary, these worthy men also have added their mite to their mother-tongue, namely, the word "laces," pronounced "*lices*," as in London.

So much for the Specialists. There remain the Lords and Commons, Bash Raises, Raises, and the Drivers, attested and unattested.

Bash Raises are born, not made, pass through periods of adversity, are invaluable and generally scoundrels. Some are quiet, most are noisy; some treat their men as sons, most as step-children. None are on service from pure motives of patriotism, and, if left alone, retire millionaires in a year. They are allowed one retainer; usually they have three. Putting it shortly, with a good Bash Rais, you are marked for early promotion.

Raises are of three kinds, good Raises who become Bash Raises, bad Raises who become drivers, and indifferent Raises who form the majority and who draw their nine piastres daily; they obtain their

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rank at the Recruiting Station by the previous purchase of a whip. Keeping this well in view during the preliminary inspection, they answer general questions put to the gang by the Inspecting Officer, and at a suitable moment recite their qualifications, with special reference to several responsible and highly paid positions recently held by them in the immediate entourage of leading Government officials. Eighty piastres douceur to the Police Sergeant confirms the appointment.

So by a steep descent to that paragon of all the vices—the camel driver. Forget, therefore, the distinction, always unreal and now obsolete, between attested and unattested men; extract, moreover, storemen, nobatchis, and wakil raises, and the result is driver undefiled.

Storemen live lives of temptation and invariably succumb. They must have sound knowledge of English, for Q.M.s have not the gift of tongues. They must issue nothing except on written order; hence the following correspondence between a well-known Q.M. of this Corps and his storeman:

"Give it two drums Mange Dressing.
(signed)——, 2/Lieut. and Q.M."

Back came the answer in a shaky hand:

"To Mister——, Finish Mange Dressing.
Wassif——."

Nobatchis are, officially, guards for day or night duty in the camel lines, over the drivers' kits or at vantage-points around the camp. Actually the position is the very present help in trouble for a harassed driver. It is the formal excuse

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for all absence or delinquency; it gives facilities for unlimited sleep. Only one Nobatchi was ever found awake, and he was charged unanimously with stealing money from his fellow Nobatchis as they slept—and of course convicted.

Wakil Raises are drivers who conciliate or intimidate their raises and are given in return a leather thong and the privilege of walking about at feed parades. They aspire to authority, but are seldom taken seriously. Sometimes they are useful.

At last, then, we are on solid ground. The man in the lines is the man of the moment. Generally speaking, by inclination he is noisy, casual, illiterate, dishonest, servile, cruel, immoral, light-fingered, and irresponsible; by necessity he has worked hard all his life; by nature he has little or no pride. He will eat anything in any quantity, wear anything in any way, march anywhere at any notice, endure hardships of sun, long hours of heavy work and severe punishment, all without resentment. But, and I say it advisedly, I do not agree with those who say that he made good in Palestine in winter time. The average Egyptian in those conditions is useless, and it reflects no discredit on the race to admit it. A section of men called out on an urgent convoy in a storm of sleet and rain put their faces into the mud and prepared to meet a death of their own choosing rather than face a power they did not know. Admit a general failure of *moral*, and there stand out the few who carried on, confessed to no discomfort, shirked no work, answered every call; in short, kept clean the record of a Corps which never failed. You see, then, the sort of man he is; and to enable you

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better to estimate his value, you must see also the work he had to do.

Life in a standing camp never bore hardly on the men. The Egyptian falls into a routine naturally; that is not to say that he enjoys doing the same thing at the same time every day, but that, faced with a given set of circumstances, he will submit to them without question just as long as he is supervised. Also, he will learn new things if explained to him, new ways of loading, changes of routine; he will carry them out well, just as long as he is supervised. In his spare moments he is a slave to every lower instinct. Providence arranged that spare moments were few.

Operations were more strenuous; there were the Desert advance, the attacks on Gaza, the capture of Jerusalem, the Jordan expeditions, and the final victory.

In Sinai Camel Transport was unopposed, and the Corps set its house in order, developed its equipment, drilled its Egyptians, and grew to be aware of its own strength. Convoys were run to time, distances were no terror, and the drivers who waved to the Turkish aeroplanes at Romani became brave men and philosophers. The Australian Divisions counted them in; Gaza operations put the seal on men's believing, and in the hard days leading to the capture of Jerusalem and Jaffa, the Corps more than fulfilled the official estimate of its ability. A special Order of the Day was published in December 1917 for the "information of all ranks": "The C.-in-C. appreciates the admirable conduct of all the Transport Services, and particularly the endurance and loyal service of the Camel Transport Corps."

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With that record behind us, we started light-heartedly on the 1917–18 winter in the hills. Up to that moment the Egyptian and the camel had done their work without any special effort; both were working with a reserve of strength. The next four months were a hideous nightmare. Conditions were almost impossible; food was scarce; frankly, the proposition was not a fair one. The Companies concerned held on, it is true, and did as much work as any other form of transport, but the cost to men and animals was grim.

Take the case of a detachment at K 32, on the Hebron Road. It was a link in the 53rd Divisional Supply Train from Beersheba to Jerusalem, and was responsible for feeding a Brigade. The convoy route lay along the main road, flanked by precipices; the camels, excellent of their kind, would not face motor traffic, and the lorry convoys from Beersheba passed and repassed them daily. Add to this a break in the weather, when the supply dumps at each end of the march and the roads in between were seas of mud, the winds pitiless and freezing, and the local Bedouin seduced the men and robbed the convoys. It was not surprising that the men deserted or went to hospital, or that camels died; it was much more wonderful that some men neither deserted nor went to hospital, and that two-thirds of the camels struggled back to the plains.

Of the men who did not desert books could be written. Three specific cases may be interesting:

One convoy lost twelve camels—died of exposure; the officer in charge was taken into hospital on the return journey; the C.S.M., an Australian,

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came in well after dark with most of the camels but unconscious across his horse; at midnight the remaining twenty-seven camels were recovered tied in single file behind a Rais, who was literally staggering from exhaustion and collapsed as he entered camp. His only anxiety was for those "sons of dogs" who had deserted, leaving him to lead the camels.

Again, a camel fell out half a mile from camp on the way back from water; food and rugs were sent out and the driver ordered to return to camp. The next morning he was found dead beside the camel, both frozen stiff. He had come back to camp and had later returned to his camel to "see" it, as the Egyptians say, or as we say, "see after" it.

A third driver was a small man who always led the convoy, and in the worst difficulties was always cheerful. Four times he had served with the C.T.C., and since he was discharged then without misfortune, I suppose returned again. In those bad days he was a pearl of great price.

Such are the conditions under which the men have worked, and such the work they have done—work, it may be said, of giants or slaves. But any twenty-five Egyptians recruited by any system after serving six months bearing the burden and heat of the day will, at the finish, when awaiting their discharge, have this record, or nearly this: Seventeen are left; one is dead of relapsing fever; two have deserted; three were bitten by camels in the early days of their service; two have been discharged medically unfit.

The Raises are quieter, the men are silent. Useless to ask them if they are happy—there will be a chorus of flattery and benediction; useless

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to ask them for complaints—you will get none; useless to call for men to re-enlist. One has married a wife and cannot come, one has bought an ox and must needs go and see it; all want nothing but ten days in their village—and a testimonial.

"Ichabod!" you murmur, for they have been pure gold; and if you are true to the traditions of Camel Officers, you will put down your new draft as the worst ever enlisted in the Corps; yet I warrant after six months you will murmur "Ichabod!" again. Swear by Kena or Nag Hamadi; class Girga with Sohag; choose Luxor before Assuit; call curses on the Fayoum: all is vanity. There was once a passing fancy to grade recruits according to physical fitness. Many officers probably had the same experience in their service. The men were paraded, clothed as the lilies of the field. Of every twenty there would be one Samson, thirteen average, and six glaring examples of the careless methods of the recruiting staffs. Our hearts bled for these human wrecks, torn from their villages, riddled with disease, hopelessly facing death from exhaustion, far from home and in an enemy's country. Gently they would be asked for their tale of woe. Four had seen service in Mudros and France, and were returning to be camel drivers for a third period of six months. One was a famous strong man able to carry a 200-lb. bale of tibbin at arm's length round the camp; the sixth had seventeen children to provide for, was formerly a porter at Assiut Station, and if discharged would re-enlist immediately—for how else shall one eat bread? Meanwhile, Samson was practising a bronchial cough!

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With this amazing personnel, a mixture of ignorance and incompetence, the Officer Commanding must have had some bad moments. He had saving clauses in his white ranks, who were generally enthusiastic and always terrified of him; and in his long experience of Egyptians, whom he knew would work if properly instructed and continually watched. But I doubt if even he foresaw the actual value realised in the Egyptian camel driver, upon whom has fallen the brunt of the transport since the E.E.F. moved away from the Canal.

Tried by extremes of heat and cold, always his own worst enemy, not accounting bravery a virtue or cowardice a crime, scourged by fever, cheerful, miserable, quarrelsome, useless, wonderful men, their name is for ever written *honoris causa* in the records of the War.

Honours and Awards

25/5/17. For steady behaviour and devotion to duty under fire on the part of certain men of the Camel Transport Corps, the following awards of extra pay have been approved by the Commander-in-Chief:

Bash Raises—£3 *each*

2293.	Hassan Abdullah Salem.
D/285.	Salman Hassan.
B/7157.	Abbass Sayed Mahmoud.
D/49996.	Yehia Zeidan.
B/5636.	Abdou Mamoud Aly.
M/314.	Harun Mohamed Sayed.

Raises—£2 10*s. each*

306.	Adam Mohamed.
D/3512.	Badier Ali Hussein.
3581.	Omar Mohamed Omar.

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10887. Hassan Ali Eid.
10869. Ahmed Hussein Mohamed.
D/299. Mustapha Yousef.
3368. Yehia Asran Suliman.
G/998. Ibrahim Fargali Mohamed.
1834. Hamid Amaan.

Drivers—£2 each

11587. Ahmed Abdel Hamid.
11933. Abdeen Hussein Hamid.
11923. Abdel Malek Mohamed.
11096. Ibrahim Hamid Salem.
1220. Mohamed Ali Salem.
3309. Ahmed Shakoon.

3427. Mohamed Ali Mohamed.
M/2313. Mousa Abdel Rahim Mohamed.
P/1271. Shehata Abdel Moula Mohamed.
P/705. Hassan Ahmed Tayeb.
P/3420. Hussein Mohamed Abu Zaid.

15/9/17. The Commander-in-Chief has approved the award of £2 to the undermentioned for distinguished conduct and devotion to duty under fire:

1730. Driver Hassan Abdulla, of A Co., C.T.C.

20/10/17. H.H. the Sultan has been pleased to approve, on the recommendation of the Commander-in-Chief, the award of the "Medaille pour Actes Meritoires" to the undermentioned men of the Camel Transport Corps for gallantry and devotion to duty during active operations. O.C. Companies will convey to each man named the Commander-in-Chief's congratulations on their distinction in gaining this award:

The Silver Medal

		Company.
L/806.	Rais Adam Mohamed . . .	L.
A/1730.	Driver Hassan Abdalla . . .	A.
D/3512.	Rais Bedier Ali Hussein . . .	D.
O/116.	Driver Abdu Abdun . . .	E.
D/3368.	Rais Yehia Hassan Suliman . .	D.

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The Bronze Medal

K/10887.	Rais Hassan Ali Eid . . .	K.
K/11587.	Driver Ahmed Abdel Hai . . .	K.
G/3309.	Driver Ahmed Shekoon . . .	G.
D/2999.	Rais Mustapha Yousef . . .	D.
2293.	Bash Rais Hassan Abdulla Salem .	K.
D/285.	Bash Rais Salman Hassan . .	D.
K/11096.	Driver Ibrahim Hamid Salem . .	K.
M/2313.	Driver Moussa Abdel Rehim Mohamed	M.
P/1281.	Driver Shehata Abdel Moula Mohamed	P.
P/705.	Driver Hassan Ahmed Tayeb . .	P.
D/3581.	Rais Omar Mohamed Omar . .	D.
D/3420.	Driver Hussein Mohamed Abu Zeid .	D.
D/3427.	Driver Mohamed Ali Mohamed . .	D.
K/11933.	Driver Abdin Hussein Ahmed . .	K.
K/11923.	Driver Abdel Malek Mohamed . .	K.
K/10869.	Rais Ahmed Hussein Mohamed .	K.
G/1220.	Driver Mohamed Ali Salem . .	G.
G/993.	Rais Ibrahim Fargali Mohamed .	G.
G/1834.	Rais Hamid Amaan . . .	G.
B/7157.	Bash Rais Abbass Sayed Mahmoud .	B.
B/4926.	Bash Rais Yehia Saden . . .	B.
B/5636.	Bash Rais Abdel Mohamed Ali . .	B.
M/314.	Bash Rais Haroon Mohamed Sayeed	M.

The above list is by no means complete; but unfortunately it is the only record I have at hand, five years after the War, and as such it is given as an incomplete record.

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CHAPTER III

THE CAMEL

(A) TYPES

Type.	Characteristics.	Natural food.	Approx. No. in Corps.	Remarks.
Egyptian:				
(1) Delta .	(*a*) Maghrabi, approximating to Algerian. Heavy-boned and coated. Great weight carrier. Good stamina and cold-resisting qualities.	Durra beans, tibben, berseem, grazing.	9,000	Egyptian camels show no markedly distinct types, but all approximate to the breeds they started from, the Delta camels being the best. The Delta Maghrabi is bigger than the Western Desert Maghrabi, and the Sharkawi, though more variable, are usually the biggest camels we have. They all need training to carry their water, as in Egypt they generally water when they like and eat a lot of green food.
(*a*) Western .				
(*b*) Eastern .	(*b*) Sharkawi. Big heavy-boned camel. Approximating to Syrian. Lighter coated and taller than (*a*). Good weight carrier, good stamina, but bad-tempered.	do.	9,500	
(2) Middle Egypt .	Mixture of Delta and Upper Egyptian. Good camel, but lighter build and not so well cared for as the Delta camel.	do.	2,700	The Delta camel owners breed them large and load them up to a thousand pounds. **Backs are often neglected and always liable to cause trouble.**
(3) Upper Egyptian	Approximating to Sudani, but not so good a camel. Moved out of his proper surroundings and crossed with other breeds, he has degenerated instead of, like many other Delta camels, improving on the original breed. Light coated, but maintain their condition very well, except in cold and wet, when they collapse. Poor-spirited and often bad-tempered.	do.	9,000	**All Delta camels resist cold and wet weather, but the Giza (Middle Egypt) and Upper Egyptian provided the bulk of the casualties in G, M, and P Cos. in the early months of the Corps and in the winter 1917–18 in the Judæan hills.** They are particularly liable to mange. Pace varies from 2 to 2½ miles an hour in the Maghrabi, to 2½ to 3 miles in the Upper Egyptian.

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(A) TYPES (*continued*)

Type.	Characteristics.	Natural food.	Approx. No. in Corps.	Remarks.
Egyptian (*continued*):				
(4) Female	All types of Egyptian represented with a few Western Sudani. All the good qualities of the male without being vicious. Occasionally very timid.	**Grazing.**	**3,500**	**Load up to 300 lb.; pace 3 miles an hour. Very easy to work and keep in condition. Do not lose condition in winter through "syming," like the male.**
Somali	Light coloured; withers very straight and long, round hump set far back; light coat in their own country; light burden; 50 **per cent. geldings. Very timid, especially at night.**	**do.**	**7,000**	**Out of 6,000 camels bought, approximately 1,000 were cast for arthritis in first year. Took a year to acclimatise, many dying of diarrhœa in process. Once acclimatised, they proved very satisfactory, and withstood cold weather as well as any other camel. Quiet and easy to work. Backs generally very clean owing to nature of saddle employed in their native country. A good camel, but some rather poor-spirited. Maximum load 300 lb. Quick mover; pace 3 miles an hour.**
Algerian:				
(1) Heavy	(*a*) Dark coloured. (*b*) Light coloured (Tunisian). Heavily built, like Maghrabi in type, but longer from knee to foot. Heavy coated, with plenty of stamina and cold-resisting qualities. Good-tempered, but occasionally very stubborn.	**do.**	**2,000**	**Fair on soft sand; would easily acclimatise. Good on hard and hilly ground and in mud. Pace about 2½ miles an hour. Very good weight carrier.**
(2) Light	Mostly dark in colour. Majority geldings; timid, poor spirit and stamina, very stubborn.	**do.**	**3,000**	

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Syrian . . .	Big, well ribbed, heavy shoulders, low hump, thick woolly coat, longish head with Roman nose. Great weight carrier, with good stamina.	Chiefly grazing.	1,200	Long striding. Pace, 2½ to 3 miles an hour. Accustomed to long marches and to extremes of cold and heat in his own country. Generally good-tempered.
Sudani :				
(1) Nile Valley . Kordafan . Western Sudan	Long-legged and tall, body varying in depth and ribs. The best types are well ribbed and very heavy camels. Head long, flat, small muzzle, ears cocked forward ; colour fawn, short coat, small hump.	Grazing.	6,500	A large proportion of these have healed backs. They gave a lot of trouble when worked. They took 8 months to acclimatise and never stood the cold as well as Egyptian camels. Owing to their height, they suffer great difficulty in muddy going. A large number of casualties in 1917–18 among these camels.
(2) Red Sea Province .	Shorter in leg, compact body, round hump ; reddish colour, clean coat, very good worker. Good stamina, able to resist cold and wet (E Co.).	do.		They can go for a longer period than Egyptian camels without water and on mobile rations, but when they lose condition they do not readily recover (E Co., winter 1917–18). Quick pace, 3 miles an hour.
Indian :				
(1) 191st and 70th Indian C.T.C.	Desert camel. Characteristics of Western Sudani. Very tall, dark colour ; muscles covering frontal bone very prominent. Majority suitable for riding.	do.	600	Pace, 3 miles an hour.
(2) 59th and 62nd Indian C.T.C.	"Grantee." Accustomed to living in cultivation and frequent watering. Very large heavy camel. Did very badly in Egypt (*vide* Casualties). Very susceptible to latia. Many casualties from sand colic.	do.	3,000	

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Supplementary to the Foregoing Table (A)

The condition of the early deliveries of the Egyptian camel was good. They were infected with mange and nearly 50 per cent. had healed backs, but their carrying power and general condition were well up to standard with one exception, when 400 were sent to hospital immediately on receipt from Remounts as too young. Later remounts were not so good; for instance, in August 1916, 20 per cent. of a consignment from Lower Egypt were unfit for immediate service.

Sudanese and Somali Camels.—Early deliveries were bad. They were reported so at the time by the C.T.C. authorities as follows: "The first deliveries of Sudan and Somali camels were disgraceful, and the officials purchasing them cannot have had the least idea of the capabilities of a camel, much less the military requirements. The better class of Sudan camel has done well, but he takes a long time to acclimatise."

A good class of camel came in about the middle of August 1916, but later remounts fell away again. They were reported in February 1917 as having "done badly."

Female camels were good with the exception of some from the Western Desert, which were reported at the time as "useless" and "never worked."

Nothing need be added to the table notes on the Syrian and Algerian camels, which were mostly excellent.

Turning to the condition of the camels when handed back to Remounts, it may be said that

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the time of the year was the worst possible, particularly for mange; that the Companies in most cases had trekked for six weeks with little or no rest, returning from Northern Syria; lastly, that the 5,000 camels left in work were the picked best camels of the Corps, after the Hedjaz Government had received 3,000 of the best from the Sudanese and Somali classes.

(B) Stable Management

The Corps relied chiefly for success on its stable management, which was framed on uniform lines which at the same time could be altered at the discretion of Company Commanders to suit special local conditions.

A camp site was, if possible, chosen facing south, on open level ground, or in winter on the sheltered side of a hill. Line ropes, accommodating 50 camels, were of a standard length of 120 yards; they might be more, they should not be less. Space between the lines should be from 15 to 25 yards. It may be laid down that, whenever possible, ground allotted for a Camel Camp of 1,200 camels should measure at least 400 by 200 yards. Room on the lines is essential to avoid injuries from camels fighting, and to minimise contagious diseases, such as mange and camel pox. British personnel must be quartered where there is a full view of the lines.

By far the most urgent need, and with Egyptian personnel exceedingly difficult to meet, was regularity in feeding, watering, and grooming the camels. The difficulty was not only to secure regularity in time, but regular quantities also of food and water and thoroughness in grooming.

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It must therefore be accepted by any white man employed in a Camel Transport Corps with native drivers that he must personally supervise the amount of forage drawn for, and issued to, the camels; that he must personally see the camels watered; and must be on every grooming parade, moving continually from line to line.

The forage ration was 10 lb. grain and 12 lb. haystuffs. All kinds of grain are issued as equivalents, whether millet (durra), gram (hommas), beans, or barley. A mixture of the first two or three made an excellent ration; barley was never satisfactory unless crushed; 1½ oz. salt was added to the ration and was an important item in it. It was for the British ranks to see that this feed was clean and that the camels were given every opportunity of eating it. In this last respect the stable management of companies working on 1st Line Transport suffered, especially in detachments under the care of relatively untrained N.C.O.s detailed from the units. Feeding and watering of camels took place at irregular times whenever the animals happened not to be at work (see Chapter on a Camel Company at work).

Watering was beside feeding in importance. It is a melancholy fact that a large proportion of officers and N.C.O.s in the E.E.F. believed that a camel required no water, or at any rate one short drink in ten days! Camels, it must be remembered, as received from the country, are used to drinking as they please, once, twice, or more in the day. They can be, and were, trained to go without water for three days and not suffer. No camel should go longer, except in extremely urgent military necessity. He should be taken to water

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between 10 a.m. and 3 p.m. and be allowed to stand at the trough for a minimum period of 25 minutes. If he is losing condition, he should be put back to every other or even every day.

After watering and feeding, the first thing most easily neglected is grooming. The Fellah, probably to avert the evil eye, does not clean or groom his camel. In those circumstances the consequences are not serious, for he is not in contact with other camels, but in a Company where mange will infect every camel in a month, clean animals are a necessity. The grooming gear (see Chapter on Equipment) must be stout and the grooming vigorous, and only the British personnel can secure this by their immediate watchfulness.

In this connection during the summer months the camels should be bathed every ten days if possible, and the clean sand of the sea-shore rubbed into their backs. It should be pointed out that this bathing must not take place immediately before dressing for mange, as the sea salt largely counteracts the effects of the sulphur dressing.

Part of the secret of successful stable management with natives is the precaution taken in advance against discomforts or ailments which rapidly reduce an animal in condition. A camel, for example, is accustomed to rest "barracked" or lying down, with its head stretched out along the ground; but during a night he will roll, stand up, and lie down again several times. The natural tendency for an Egyptian driver is to tie the head rope short, preventing the movements of the head and any relief from change of position. Head ropes, therefore, must be kept at full length. Again, the camel lines, if on hard ground, must

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be dug up at intervals to give a level surface; otherwise the play of the camel's pad and elbows make hollows and bumps in the ground which cause the animal continual discomfort.

To avoid saddle-galls entirely is impossible, but far the most important thing is to see that every camel has a well-padded and rigid saddle, properly fitted, and that saddles are not interchanged. No rule can be given to avoid this: many ways have been tried; ultimately it is a question of stable management and incessant care. Casualties occur frequently from injuries received in the lines from camels biting themselves or their neighbours, or from heavy falls due to the bulls fighting when in "must."

The saddle should remain on the camel's back until it has had time to cool, otherwise he throws his head violently round to ease the irritation from the saddle mark, often tearing the flesh across the wither.

Fighting and quarrels can only be prevented by isolating known vicious camels and by keeping the animals picketed well apart. If there is any doubt at all about a camel's temper, he should be muzzled when standing in the lines.

In the same way, most of the damage done by contagious diseases can be prevented by previous precautions. If the camels are tied well apart and the lines changed at intervals, if the animals are inspected daily for mange and kindred diseases and suspicious cases isolated, casualties will be kept at a minimum.

But, notwithstanding precautions, casualties are bound to occur, and it was part of the training of all the British personnel in a Camel Company to

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be able to recognise and treat the simpler wounds or diseases. It may be admitted that often Section Officers and Company Officers, both from Company pride and interest in particular camels, kept cases in their sick-lines for long periods which should have gone back to the Camel Hospitals. It is absolutely necessary, from the point of view of efficiency and camel economy, to evacuate camels which need more than fourteen days' treatment for a thorough cure. It is so important, and so often disregarded, that it might well be made a matter for severe disciplinary action. C.T.C. Routine Orders made the point quite clear.

The only time when execution of this order must be postponed is during actual active operations, and then the first advantage should be taken of any inaction to get a convoy of sick animals to the rear.

(C) Veterinary

As to the treatment of camels becoming casualties, "General Instructions" gives the treatment to be observed in the Company sick-lines.

Of "surra," Indian Veterinary Officers reported that the camel in India is actually dying out owing to this disease. The Turkish camels were decimated by it; but while it was a standing menace to the Egyptian C.T.C., casualties directly due to it were not heavy. Places known to be affected were avoided and thorough tests were carried out in the Corps after the fly season of 1918, and infected camels sent to isolated station work on the lines of communication. By far the most casualties in the Corps were caused by mange developing into debility. Whether the deadliest

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mange was a complication of "surra" is not quite certain, but it has been estimated that whereas debility was responsible for 80 per cent. of deaths in the Corps, mange caused 60 per cent. of the cases of debility. Each August the mange rash appeared practically throughout the Corps, and if from varying circumstances thorough clipping and dressing was not immediately available and carried out, the winter months were entirely occupied with the war against this disease, and with generally disappointing results. In the hilly country of Palestine, for instance, a choice had to be made between certain casualties from exposure if the camels were clipped and certain loss of condition from mange if the winter coats were left. It was decided that a mangy camel was better than a dead one. In this connection it has already been said that the camels were handed back to Remounts and sold at the worst time of the year. The mange season was at its height and the Companies had come off a trek from Northern Syria, where weather conditions demanded retention of the long coat in spite of the spread of mange.

The only rules to be laid down to guide Camel Transport Officers in dealing with mange are, first, to watch for it, and lastly to be regular, winter and summer, in dressing camels for it, more or less according to the severity of the attack. Good stable management will avoid many cases of colic and enteritis; carelessness in feeding and watering the animals is almost entirely responsible for such cases. A drastic but successful cure for colic and scouring, particularly among the Somali camels when acclimatising, was one tablespoonful of raw creosol in a wine-bottle full of water, used as a

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drench. A little oil ought to be given later. Results were in many cases excellent.

Sunstroke was treated by letting blood from the ears and covering the head and neck with wet sacks. In very hot spells the camels should be taken off the lines and allowed to move about at leisure. In the Jordan Valley particularly, the camels were rugged with one rug during the heat of the day, and very little trouble was experienced from heatstroke.

On the surgical side, saddle-galls on the short rib are the commonest wounds and the easiest to prevent or cure. The only rule to be laid down is that they must be taken in hand at once, when the gall is a rub or swelling. If at that moment the camel is taken off work for several days, and the wound cleaned twice a day with salt water or the swelling bathed with cold water, the injury is nothing. The remainder of the cure is in refitting the saddle—again a question of stable management!

Lameness as it occurred in the C.T.C. was generally the result of bad going, bruising the food-pad, or of nails picked up on trek. In many cases four days' rest on lines littered with brushwood would settle the bruise.

If the injury was due to a nail, extraction and poulticing with bran was successful, if the case was taken at once.

All injuries to camels involving flesh wounds are serious if neglected for a day. The animal is more subject to septic poisoning than any other; on the other hand, if the wound is taken in time, healing, particularly with salt water, is very rapid.

Sore and fly-blown ears occurred first in Southern

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Palestine, and the trouble easily spread to the brain in the form of an abscess. If the inflammation is not soon arrested, free use of the knife is best until the seat of the trouble is cut away; after that, the wound need only be kept absolutely clean and protected to recover.

In view of the foregoing, it will be understood that officers and N.C.O.s were judged by the fitness of their camels. At the time of joining the Corps, everyone has the idea that camel management is different to any other animal management. The rules, however, are the same for all. The difference is that the personnel directly attending the camel is generally native, whether Egyptian or Indian peasant workers, and that the camel gives little or no warning until his complaint is serious. The Turkish Camel Transport Corps failed, in spite of excellent camels and sound orders for their treatment, because the personnel was irresponsible. Evidence shows that the chief reasons for the 40,000 deaths in the Turkish Camel Corps in Palestine and Syria were, first, bad stable management and starvation, and secondly, "surra."

To its stable management and the readiness of G.H.Q. to listen to complaints against unfair treatment and overwork, and to correct the faults, is due the success of the Egyptian Camel Transport Corps during three years of continuous duty.

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LIST SHOWING CAMELS PURCHASED IN EGYPT FROM 1915 UP TO 1918

Mudirieh or Mohafza.	Camels.		Total.
	Male.	Female.	
Behera	2,471	55	2,526
Gharbia	4,201	17	4,218
Dakahlia	1,554	6	1,560
Sharkia	2,716	24	2,740
Menoufia	5,800	17	5,817
Caliubia	2,054	42	2,096
Giza	1,356	70	1,426
Fayoum	1,079	122	1,201
Beni-Suef	1,127	253	1,380
Minieh	1,741	365	2,106
Assiut	2,823	720	3,543
Guergeh	1,401	962	2,363
Keneh	1,297	751	2,048
Asswan	272	91	363
Cairo	203	—	203
Alexandria	86	—	86
Ismailia	33	—	33
Grand Total	30,214	3,495	33,709

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CHAPTER IV

EQUIPMENT

(A) Camel Equipment

The Start, December 1915 *to March* 1916.—Between December 1915 and March 1916 six Companies of Camel Transport, each of 2,000 camels, were formed and marched out for immediate service. The first equipment was definitely in the nature of a stop-gap until a practical uniform type could be decided upon, to stand the strain of strenuous campaigning, easily adaptable to varying requirements, and made of raw material either available in the country or easily procurable in quantity.

Depot, 1915.—Camels arrived at the Depot bare, except for a head collar in more or less bad repair. The earliest contracts for 20,000 saddles, native pattern, produced a certain number far short of requirements, and, for the purpose of immediate service, practically useless. The wood, composing the arches, shume poles, wedges, and cross bars, was unseasoned, the lashings inadequate.

Because immediate needs were pressing, saddles were purchased with the animals from the owners. In this way about 10,000 saddles were secured, made of hard seasoned wood but almost all in bad repair. They were overhauled and made thoroughly serviceable in the workshops at the Depot or those of the Egyptian Government, at a cost of

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20 piastres each. All fittings, such as girths and breastplates, had to be renewed entirely. Loading ropes were spliced together from old pieces brought in with camels and supplemented by small supplies of white cotton rope from Ordnance.

Ordnance Supplies, 1915–1916.—To this point Ordnance could only supply 750 saddles of Egyptian Army pattern and a limited quantity of white cotton loading rope. The latter was cut into lengths of 24 feet for loading ropes, 8 feet for breastplates, and as required for girths. Head collars were repaired editions of the "baladi" or village type.

Development, 1916

Difficulties of early C.T.C. Companies.—Following the formation and hurried equipment of the first six Companies, tests and experiments were carried out, but until standardised equipment was available, all repairs had to be carried out in the field. Two badly broken saddles were made into one serviceable; a broken loading rope would become a girth. The saddle pads, always a source of trouble, were of old straw stuffed in rotten or rotting material, and heavy casualties in sore backs were the result. A good saddler can turn out a limit of five complete saddles per day if he has unskilled labour to assist him in stuffing the pads and fixing the saddle. In the early companies 70 per cent. of 2,000 saddles in work required constant repair, and raw material was at a premium.

Head Collar.—Experience had by this time standardised the head collar, abandoning the native type which fitted loosely under the jaw with two metal plates, edges turned in and sharpened,

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acting as a rough curb. The system is unnecessary, cruel, and abused by native drivers. The standard head collar has a curb and the neck chain runs freely through the metal ring.

Girths, Breastplates.—The need for a girth and breastplate had become obvious. The Fellah, working with his own camels a few at a time, relies simply on balancing his load; once loaded, the camel moves at his own pace on a flat track. Military camels, relatively unskilfully loaded, moving in formation, complying with rules of the road and of necessity led by camelmen, moving in accordance with a pace set from the front, are liable to shifting loads from a variety of causes, unless the saddle is securely supported by a girth round the belly and by the breastplate.

Loading Ropes.—Loading ropes when received were still cotton and most excellent, although expensive. Later economy brought into use a rope made of palm fibre. This type persisted, in spite of continuous complaints, until the middle of 1918. It was not strong enough for the work, and particularly in convoy companies was a standing anxiety to the Company Officer. The need was for some material which was at once stout, pliant in any weather, and easily supplied. Fibre is too weak, cotton too expensive. Heavy manila rope hardens in wet. A composition of two strands fibre with one of hemp was satisfactory, but was only a late invention.

Rugs.—Early in 1916 sacks were used as rugs. In winter 1916–17 camel rugs made from old blankets and sacks were issued by Ordnance. The winter following, a well-made rug of canvas lined with blanket and with girths and throat

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strap came into general use, with the issue of two per camel.

Feed Sacks.—Experiments were made with nose bags and with the Indian canvas basin. Neither was suited to work with the Egyptian driver. Nose-bag feeds cannot be adequately checked for diet or deficiency, and with canvas basins feeds were scattered by the camel. Split five-bushel sacks spread in a "mudwad," or manger, on the ground, answered the purpose very well. Feeds were easily checked, and the sack surface was large enough for the camel to move the food about without wasting it.

Saddles, Indian.—The main difficulty experienced so far was the saddle. The Indian pattern was tried but found wanting. O.C. D Company made the test and reported as follows: "The 41 saddles received from the Indian Transport camels were put into use by my Depot section at Abd at the beginning of November, but only a few of them were kept in continuous employment. The majority are much too long in the pad, having been made for the Indian camel, a much larger type of animal than the Egyptian camel. The pad (there is only one to a saddle) requires to be cut down by nearly a foot to fit the average C.T.C. camel. Another difficulty in the working of the Indian saddle is caused by the absence of a long loading rod. One of the rods at the side of the saddle requires to be lengthened about 6 inches each way to suit the Egyptian method of loading. If the Indian type of saddle were made with a shorter cushion and a longer loading rod, the solidity and continuity of the cushion and the shape of the back arch are a great protection

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against sore backs, and a few camels of my Company that were able to wear the saddles at my disposal were free from this complaint. At the same time, the Indian saddle seems to me better suited for carrying light and compact loads, such as fanatis and forage bags, than for mixed bulky loads, such as engineering stores and kits. For these the Egyptian country type is better, because of the greater breadth of the pads and the better support which the cross-bars give to the load."

Turkish Saddles.—Turkish saddles captured at Romani were tested without approval. O.C. B Company reported: "An experiment with this Turkish type of saddle was made on 30/10/1916, on 50 camels of 2nd E.L. Field Ambulance, 126th Brigade, 42nd Division. A saving in short rib wounds was effected, but owing to the weight thrown on the withers great care had to be taken in loading. The padding of saddle pads is mostly in the centre, and, taken in conjunction with the position of the arches, which are placed together forward, accounts for the weight thrown on the withers. With experienced saddlers a great improvement might be made in this type of saddle and I would suggest: (1) the stuffing to be taken from the centre of the saddle pads and placed around the fore part; (2) stitches be put in to prevent this stuffing working back."

Saddles, Improved Baladi Pattern.—The main points governing the selection of a standard saddle were:

(i) Consideration of the many breeds and sizes of camels to be fitted; and—

(ii) Consideration of the inherited knowledge of the Egyptian drivers, who would naturally under-

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stand and work better with an Egyptian country pattern saddle.

Failings of the large Baladi Saddle and Improvements.—The final choice of a standard pattern saddle was the result of improvements made in the Egyptian saddle. This latter was made of a front and back tree, two cross poles or loading bars, two front pads, one back pad, one crupper. The result was a saddle intended to be rigid. It was anything but that. It was made in a large size, for the Fellah understood that the first and chief fault in camel saddlery was to pinch or nip the part of the camel which took the load. He therefore erred on the right side. The failings were that it was extremely heavy and that the loads touched and even galled the camel's side between the trees. The weight was no great fault, for the excellence of the wood more than made up for it. The second failing was remedied by side bars or sticks fixed to the trees by galvanised wire sockets which helped to support the saddle without making it too rigid and kept the load from touching the camel's body. But that they did their work up to a point was shown by the wear upon them, the greater difficulty being experienced in keeping them in position. The latter is to a great extent obviated if the camel rug or rugs are folded in two and stretched across the saddle, covering the side sticks. A further failing of the large saddle is that the back pad after wear flattens down across the camel's loin or pin bone, causing a bruise developing into a bad sore. Experiments were made with a pad cut away from the rear to the top of the short rib, avoiding the pin bone and trouble in that direction. It was later found that

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if necessary the standard Baladi back pad could be thrown forward in the same way by altering the ties and the set of the pad. Ordnance was in this way spared two patterns, while the idea of the cut-away pad was retained in practice. A further difficulty arose with the rope lashings which hold the cross poles or loading bars to either side of the saddle trees. Damp mornings or rain followed by hot sun heat alternately contracted or loosened the cordage in spite of care, thus giving play to the component parts and allowing the saddle to give and sway when loaded. Wire lashings were accordingly tried, but were not adopted. Special tools were required to handle the wire, and whereas any Egyptian can work with cord, to loosen, tighten, or adapt in any way, any alteration of these wire fittings became at once work for the Company carpenter. In this way by the summer of 1916 the authorities responsible for the equipment had fairly well made up their minds as to requirements, and by early 1917 all Camel Companies were equipped with the new patterns. Two types of saddles were adopted, the large and small. The large-pattern saddle weighed about 80 lb., and was of the measurements shown on page 65.

The front tree is about 2 inches longer than the back tree and is put at right angles to the cross bar. The back tree is inclined towards the front tree, an inch out of the vertical. The side bars or side sticks are fixed to the trees by galvanised wire sockets, and help to support the saddle without making it too rigid, and keep the load from touching the camel's body. The object of having two pads in the front tree is to prevent the weight of the load resting on the top of the withers. The

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pads should be so fitted as to keep the tree at least 6 inches clear of the withers. This can be done by adding to or increasing the straw stuffing according to the thickness of the camel at the

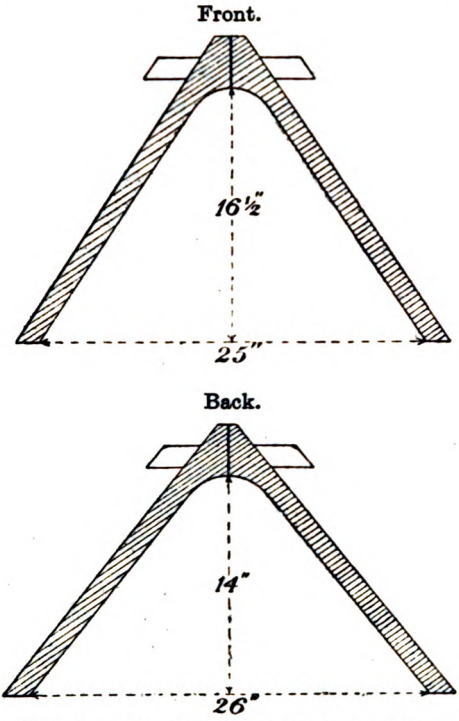

FIG. 1.—HEAVY-BURDEN SADDLE TREES

1. Space between front and back trees, 18" to 18½".
2. Inside splay of trees, front 25", back 26".
3. Depth of front tree, 16½".
4. Depth of back tree, 14".
5. Length of side pole, 4' × 1½" × 2".
6. Length of side sticks, 2' 8" × 1½" × 1".

withers. The back pad should be so fixed as to prevent any weight being carried on the hump. To obtain this object, the back pad should be pushed forward 2 inches or more out of the vertical, according to the fall of the back from

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the hump. This pushing forward of the back pad also keeps it clear of the hips and short ribs, which would otherwise be galled by the friction of the pad.

Description of Saddle.—It is composed of 1 front tree, 1 back tree, 2 cross poles, 2 or 4 side bars, 2 front pads, 1 back pad, 1 double girth with lateral straps, 1 breastplate, and, in hilly countries, 1 tail strap.

The trees are of suitable tough, straight-grained wood, free from knots and thoroughly seasoned. Each tree is made of two parts, held together by means of two stout wedges in the case of large-pattern saddles and one in small.

The cross poles and side bars are of the toughest and straightest-grained wood available, for it must always be borne in mind that heavy loads are carried and that a camel will at unexpected moments indulge in a sand-bath, with disastrous results to any faulty equipment. The cross poles are lashed together on either side of trees and just below the wedges; the lashes are of a strong thin cordage (tent line small), $1\frac{1}{4}$ lb. cordage required for each saddle. Pads are made of a stoutly woven cotton material; the outer sides are further strengthened with a kind of hemp sacking used in the coffee-bean transport trade, known locally as "shinfas," or still better by English-made jute.

Girth ties, 3-strand, 1-inch hemp, 45 inches length. Pad ties, 3-strand, $\frac{1}{2}$-inch manila (tent line small).

Shinfas or jute served the double purpose of saving the outer side from the great wear and tear due to the oscillation of loads and preventing the camel from making an unauthorised meal of

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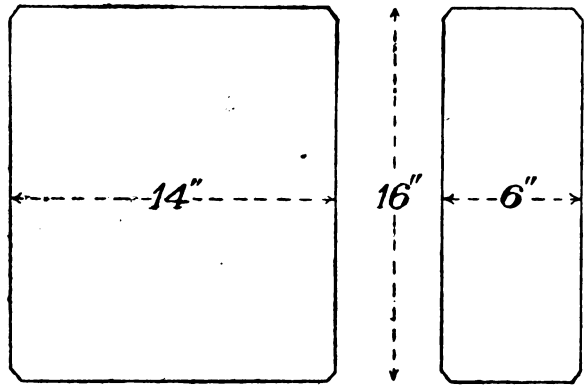
a pad. The pads are provided with pockets, the front ones at top and the back ones on the inside at apex of angle. Through these pockets the necessary quantities of rice straw are carefully rammed home with specially made ramming tools.

Pads, Front, Large.



Pads, Back, Large.

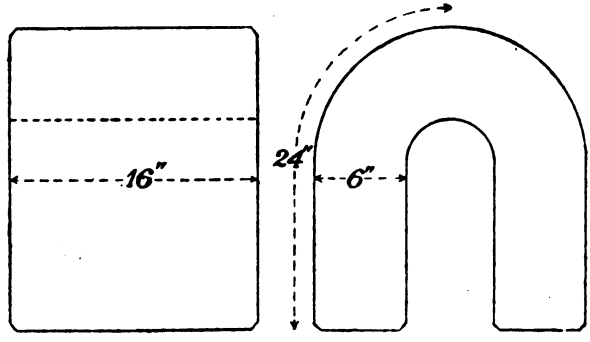


FIG. 2.

The pads are provided with cord lacings with which they are laced into position at top and sides of trees. These laces go right through the trees and pads and back again, care being taken that they are drawn thoroughly tight and in such a manner that the cordage becomes recessed in pads,

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otherwise, through friction, camels will soon be put on the sick-list.

The girths are double with rings of iron at the four ends and lateral straps joining back and front. They are made of strong cotton webbing, and strong hemp ropes are fixed to side bars and passed through the rings when girthing up. Breast-plates are made of similar material.

The small-pattern saddle was intended for the use of the light-burden camels, and differed from the heavy-burden chiefly in size alone. Its weight was 56 lb. In place of two side bars it had only one on each side. The trees were held together by one wedge, and the back tree and back pad were much shorter than the front. Measurements of small saddles were as for the large, except where shown in the diagram in Fig. 3.

Saddles for the Somali camels demanded special treatment. High and broad in the withers and falling sharply away behind, the saddle dropped and allowed the load to settle in rear of the hump.

The Somali is used to carrying his load well forward, and various alterations in the small saddle were made to accommodate him.

(1) Span between front and back tree inside dimensions to be 22½ inches.

(2) The straw at the bottom of the front pads to be removed until the pads are 5½ inches at the top and 3 inches at the bottom.

(3) The back pad to be stuffed through the pocket until the pad is 9 inches in depth at the back and 4½ inches in depth at the front. The straw withdrawn from the front pads should be sufficient to fill up the back pads.

Saddle Fitting.—First, adjust the gap between

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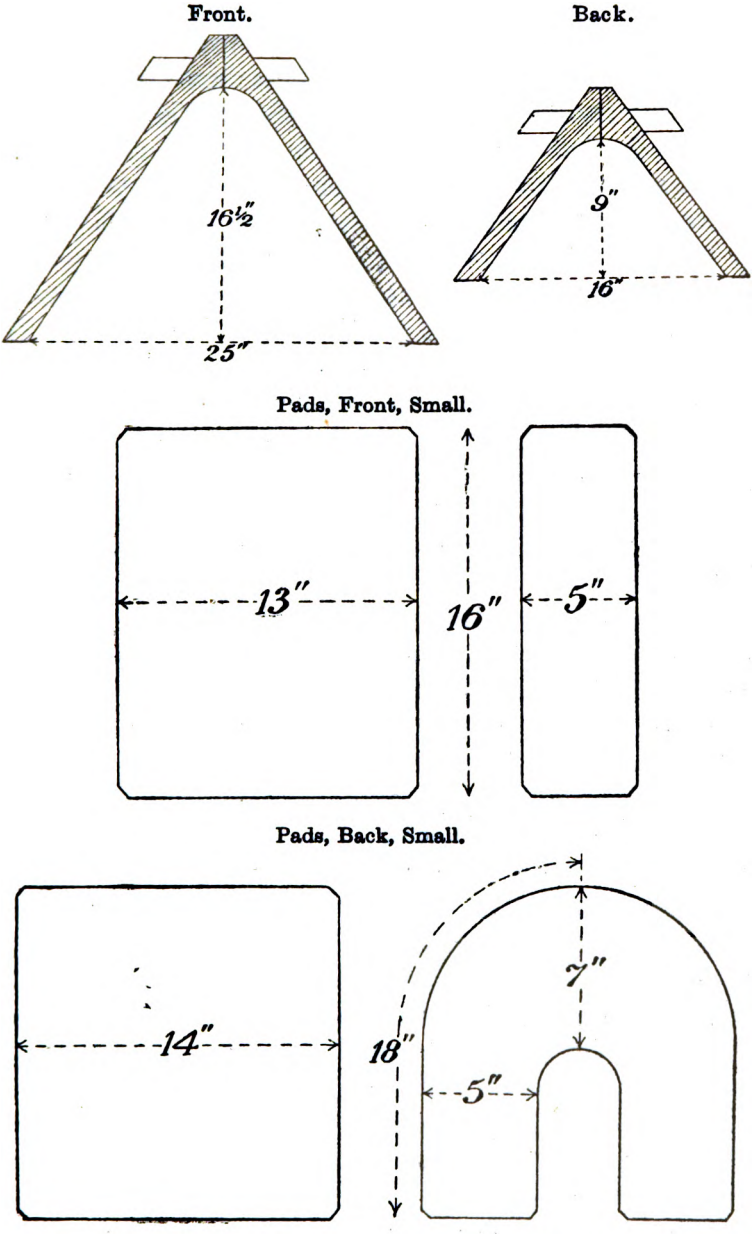

FIG. 3.—Pads, Heavy and Light Burden, Standard Size.

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trees until back and front pads are nearly clear of the animal's hump. This is arrived at by carefully tapping the heads of trees in the direction required with a mallet.

Secondly, the pads are made to fit by either increasing or decreasing the straw in pads (this is done through pockets provided for the purpose) until they bear gently on the sides but are well clear of the spine; the girthing up and loading will do the necessary bedding down. Always girth up the front first and as far forward as possible.

Any tendency to "nip" due to the narrow trees must be strictly avoided, as this will lead to inevitable sores or even broken short ribs. Likewise a wide rolling saddle will cause trouble to the spinal regions; both can be avoided by adjusting the angle of trees by either tapering off in upward or downward directions, as the case may be, the inside face of the heads of trees.

Cacolets.—Work done by the Camel Transport Corps included the transport of sick and wounded. The Egyptian Army pattern cacolets held the field in 1915–16. The C.T.C., after hard experience, condemned them. Built after the manner of a riding saddle, they were at once narrow, galling to the withers, fitted with pads badly stuffed with hair, riding high on the camel, and when loaded given to violent oscillation. The leather work hardened and cracked in the sun, and the pad to be restuffed had to be remade.

Indian-pattern cacolets were of the same elaborate leather type, and were discarded for the same reasons.

The type later in use with satisfactory results was a development of the Turkish cacolet. The saddle

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was the ordinary heavy-burden pack saddle adapted to cacolet work by iron frameworks, one near and one off, interchangeable, each clamped to the side of the saddle near the arches and provided with brackets into which iron arms of the bed frame or chair fit. The bed frames in the lying-down cacolets were steadied by "girths steadying" passing beneath the camel's belly from outside to outside of the bed frame.

This pattern has the extra advantages of being available for ordinary transport work when not required for medical services, and of bringing the work of transporting casualties within the compass of the heaviest camels. The old-pattern saddles were so narrow that only small or razor-backed camels could be used.

Special Saddles.—Specially adapted saddles for Signal or Machine-gun Company work were not developed by the C.T.C., but a good line-laying saddle came to light among saddles captured at Romani, which was used with good results by the 52nd Divisional Signal Companies. A platform was superimposed on the burden saddle with wooden posts standing up, into which a signal drum of wire was fitted and revolved as the camel moved ahead. There was room in this platform for a man to regulate the laying of the line or to wind it in again.

Breastplates and girths were of cotton, the latter of 2½ inches woven band. It was double, holding both back and front trees, and was held in position by two cross bands, one on either side of the camel. It was tied by rope of 1-inch hemp to the saddle bars; rings on the girth allowed ties to be adjusted as required. The ties were

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spliced to the bars, and to the rings on the near side, so that the driver fixes, loosens, or tightens the girths always from the offside. In cases where a new girth stretched and could not be tightened, a knot was made in it just below the rings without injury to the girths or the camel.

Grooming Gear.—Grooming, the importance of which had been recognised by early 1916, when two parades were ordered daily for the purpose, was carried out by "brushes" made from old ropes or loading nets plaited to form a flat rough surface, capable of dealing with the coarse hair of the camel.

The iron hoops binding bales of tibbin were bent into a hoop, bound at the narrow end for a handle, and the wide end filed and sometimes serrated.

The combination of these two formed a cheap and very effective grooming kit, which could be renewed at any time by a Company in the field, without indenting on Ordnance.

For the remainder of camel equipment the following table will suffice. The figures shown generally include 5 per cent. spare.

Equipment Supply.—Generally speaking, Camel Companies received Ordnance stores through ordinary channels, but to assist themselves and Ordnance, a C.T.C. representative was quartered at the Advanced Ordnance Base and notified Companies of stores awaiting them, or he forwarded the stores by camel or any available transport to a more convenient collecting station. Besides this, a forward camel depot was formed at which each Company had a dump. Remount camels were issued with fitted saddles from this depot and

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equipped fully, if required, from the Company dump. This saved Companies from carrying spare saddles in any unwieldy numbers, and ensured that there was no delay after the arrival of remounts in putting them to work.

EQUIPMENT ON COMPANY ESTABLISHMENT

Establishment of 1,200 Burden and 30 Riding.

Articles.	No.	Average Wastage Monthly.	Remarks.
Rugs, camel .	2,460	—	Perpetual repairs necessary in heavy-burden Companies.
Hobbles, camel .	1,230	200	If used.
Cacolets, lying .	3	—	Includes six heavy-burden saddles adapted.
Cacolets, sitting .	3	—	
Saddles, pack (complete with pads)	1,194	100 sets pads	Depends on weather. Average life of pads on working camels, three months.
Straps, breast .	1,244	100	
Collars, head .	1,320	500	Varies. Fifty will often go in a day.
Girths . . .	1,260	100 girths 300 ties	
Ropes, loading, pairs	1,200	600 10	If made of fibre. If made of manila.
Muzzles . .	120	20	Establishment not sufficient.
Nets, fibre, pairs .	600	200	Rarely used.
Protectors, pad .	120	20	Depends on nature of ground.
Shears, camel .	18	—	
Saddles, camel, riding	30	1	Apt to break at top of tree.
Bags, sand . .	1,230	600	To carry two days' reserve forage on mobile scale. Always in possession of a Camel Company.
Sacks, 5-bushel .	1,350	200	Split and used in place of nose bags.
Cordage, hawser, fathoms	1,320	—	Establishment not sufficient.

(B) Egyptian Equipment

The equipment for Egyptians in early 1915 was confined to one blanket. It must be borne in mind that the need was to suit a class of men whose

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native dress was a long smock or gallabia, a skull cap bound with a long scarf, a pair of roomy drawers, and occasionally slippers or sandals. Recruiting would have been interfered with if the official uniform had been an orthodox military outfit. Moreover, such a uniform in the hands of an Egyptian Fellah, away from unlimited supplies of water, lends itself to the breeding of lice and lice-borne diseases. For these and other reasons—economy, for example—a uniform was fixed, comprising one blue gallabia with C.T.C. in red letters on the front, a shirt, a cotton skull cap, a pair of drawers, and in winter an overcoat. The allowance of one blanket was increased to two. This was ample and satisfactory for the desert campaign of 1915–16, and for Southern Palestine to September 1917. Winter and the nature of the country hereafter required a development in the Egyptian clothing, and the scale was laid out as in the table on page 75.

This table of equipment was welcomed as the end of all trouble with the drivers, both in regard to casualties to them from exposure and the appearance of the men; hope, however, was belied, for Egyptians, with exceptions, prefer to wear putties as a head-dress, to leave all important buttons undone, to wear their shirts (always two at a time) outside their breeches, to sell their boots (25 per cent. of them indeed cannot be fitted with boots, in place of which a marching sock or sandal would successfully answer the purpose). Experience proved that a minimum number of articles of clothing should be issued to the Egyptian to obviate loss or wastage and disease.

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Articles.	Establishment.	Monthly Wastage.
Boots, ankle, pairs.	1 per man.	20%
Skull cap . .	1 ,,	—
Drawers, pairs .	2 ,,	20%
Gallabieh . .	1 ,,	50% (if in hard work).
Great-coat . .	1 ,,	20%
Jersey . . .	1 ,,	20%
Putties, pairs .	1 ,,	20%
Shorts, pairs .	1 ,,	10%
Discs, identity .	1 ,,	1%
Dressing, field .	1 ,,	—
Shirts, flannel .	2 ,,	30%
Socks, pairs . .	2 ,,	50%
Belt web . .	1 ,,	—
Blankets . .	2 ,,	20% (part-worn the usual issue).
Sheet, bivouac .	1 ,,	10%
Water-bottle. .	1 ,,	33% (canvas).
		20% (tin).
Seal . . .	1 ,,	10%
Sandbag . .	1 ,,	30% (for drivers' spare kit.)

The one occasion on which the supply of Egyptian's clothing failed was with the commencement of the 1917–18 operations. The C.T.C. driver, like British troops, was then wearing the summer issue of clothing, and the advance on and pursuit of the retiring enemy was so rapid that the first stress of winter found him in the hills of Judæa still in his summer kit, suffering from cold, and some deaths were caused before warm clothing, i.e. cardigans, great-coats, boots, socks, extra shirts, and blankets could be issued.

Overwhelming demands were made upon transport already labouring under distressing conditions; and such is the nature of the Egyptian that had winter clothing been issued before the advance,

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he would have thrown away or lost the bulk of it on the march.

C.T.C. Companies employed in the advance, working at high pressure, had no available camels for carrying Quartermasters' stores; and when the first need for warm clothing came, the transport difficulties from railhead were such that over an extended period not even complete mobile rations could be got to the troops and animals.

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CHAPTER V

LOADS AND LOADING

Too much importance cannot be attached to the loading of the burden camel. Unskilled and careless loading is responsible for as many casualties in the way of sore backs and sore withers as badly fitting or deficient saddles.

Methods of Loading.—It is necessary, first of all, that the drivers in a Camel Company, whether on 1st Line transport or on Convoy duties, should receive careful instruction in correct and rapid ways of loading. They should be prepared to load any kind of article in some set way which they have been taught beforehand.

The following five ways of loading all stores have been proved sound and successful by the Corps :

(1) *The Ammunition Tie.*—Put the looped end of the loading rope over the left of the loading bar, pass it under half of the load, then over the top of the load, loop over the right end of the loading bar, then back under the other half of the load and over. Loop over the left end and straight across the load to the right and back again to the centre, through the cross loop and up to the centre of the saddle. Tie to the loading rope of the other side of the saddle, which will keep the load more secure. This tie can be used for any type of load (see Fig. 4 of illustrations).

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(2) *The Double Loop.*—Pass the loading rope round the bottom of the load to the other end, loop round under and over the loading bar, back again under and over the loading bar, then across the centre back again and tie to the loading bar. This tie is excellent for compressed bales (see Fig. 5 of illustrations).

(3) *Single Loop.*—There are two methods.

(*a*) Make a loop of fixed length (end of the loop to reach to the ground) between the two saddle trees, leaving the two ends free. If the load is complex, cross the loop, otherwise leave it simple; put on the load, bring the ends over the load to the sides of the loop, pass through and back to their respective ends of the load, and fix to the loading bar. N.B.—This tie will carry every type of load, but the drivers must be trained to work in pairs for good results (see Fig. 6 of illustrations).

(*b*) From end of the loading rope fixed to the end of the loading bar a loop is made hanging between the trees; the load is put on, the loop brought under and over the load to the centre, and the spare rope is run through the loop from the front of the loading bar, pulled tight over the rear of the loading bar, run back through the loop, and tied with half-hitch to the front. This is a favourite method among Egyptians. Its only fault is that it will not accommodate two small packages loaded on one side unless the loading is very exact (see Fig. 7 of illustrations).

Water Carrying.—The following method of loading the galvanised-iron water tanks or fanatis, used by the Force, was adopted throughout the Corps from May 1917:

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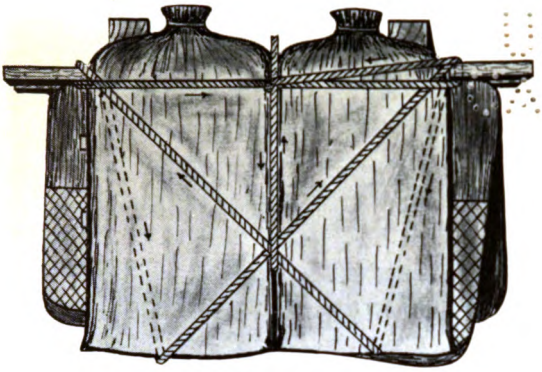

FIG. 4.

FIG. 5.

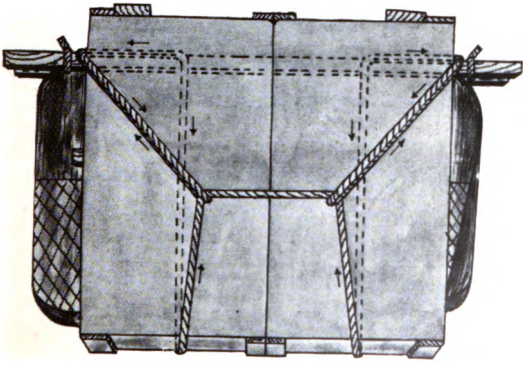

FIG. 6.

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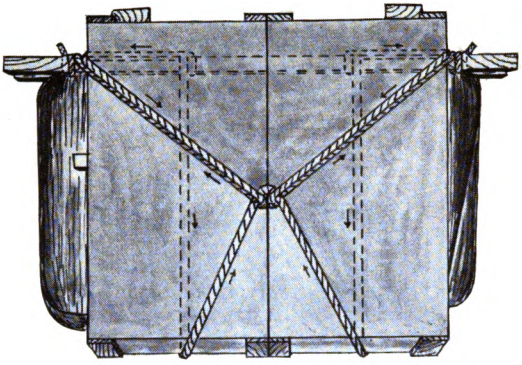

FIG. 7.

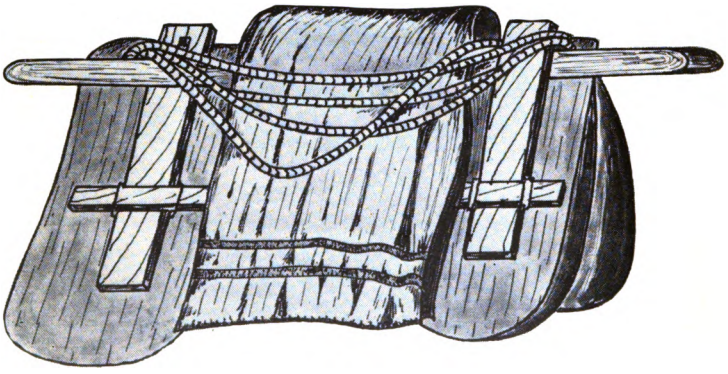

FIG. 8.

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Method.—The loading rope is lashed in such a way as to form two loops, each 2½ feet long, hanging on the two side poles outside the front and rear arch. The loop is inserted through the handle of the fanati, brought up under the side of the pole, to which it is lashed and looped with a hitch, if necessary, to the opposite side pole. Time is saved when ropes are thus prepared on the lines previous to marching off.

The advantages of the foregoing method are:

1. Quick loading and off-loading, most useful in congested areas.
2. Certainty that ropes are not lost at night.
3. Possibility of using British fatigue parties owing to the simplicity of the operation.

Loading of Camel's and Driver's Gear.—There was for a long time a difficulty in loading the above without interfering to a marked extent with the loading space of the saddle. The following method is at once uniform, simple, and effective.

Method.—Lay the camel rugs out flat; upon them spread in order the driver's bivouac sheets and blankets, fold over once; the whole will then be placed across the top of the saddle, passing beneath the loading ropes and the nets (see Fig. 8 of illustrations). The driver's kit bag and the camel reserve ration are put into position beforehand between the saddle trees and are covered by the blankets.

Loads on 1st Line Transport.—It is more difficult to lay down precise rules for loads met with on work in 1st Line. In many cases the British personnel of the units undertake the loading themselves. Generally speaking, when operations are in progress, loads are the general impedimenta of

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an army on the march—blankets, bivouac sheets, valises, tents, medical and sanitary stores, and cooking utensils. Blankets form one of the most difficult loads and should be dealt with as follows:

Method.—The total number for each camel—75 or thereabouts—should be divided into six lots and rolled thus, each roll to be tightly tied up: Lay out twelve or thirteen blankets one on top of the other, then double over so as to reduce the length to one-half.

After above procedure, roll as tightly as possible and tie up with three stout ties, as under:

Three such bundles go on each side of a camel in a net supported by the loading ropes.

The two inner rolls must be flat against the saddle and the third on the outside. It is important that the length of the load should be as short as possible; hence, fold the blankets in half and roll from the side.

Method—Valises.—The same principle as above described should be observed as far as possible, always remembering that the weight of the valise is deceptive. In case of doubt, they should be weighed.

Method—Tents.—The maximum for a heavy-burden camel is: 4 C.S.L. or 2 C.D.L. tents, with poles. If properly packed, they can be loaded by any one of the five methods previously illustrated. The tent poles, if in one piece, should be tied at the rear to open out the ends on each side of the camel's head.

Method—Miscellaneous.—Medical, sanitary, and cooking gear or stores must be loaded in nets, with rope support, avoiding excess weight or

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irregular balance. There are no hard-and-fast rules to make such loads satisfactory.

Loading Nets.—Every Company has an establishment of 600 pairs of loading nets. It may be laid down that, though not useless, loading is better where they are not employed. The following extract from a report of D.D.S.T., W.F.F., in 1916, indicates obsolete and wrong methods:

"The first few convoys were much handicapped both in loading and on trek by the absence of loading nets. As a general principle, it will be found that nearly all A.S.C. packages can be loaded in nets, and in some cases, such as bags, they are absolutely essential. On the other hand, very few varieties of packages can be held securely on the camel's back by ropes, and furthermore there can be no question that roping is infinitely the longer process, particularly when dealing with unskilled drivers."

Ignorance is BLISS ! !

Weights.—Heavy-burden camels carry 320–350 lb., plus their saddle, their own and their driver's kit. Any one of the following is fair specimen heavy-burden camel load:

6 cases Preserved Meat.	6 cases Biscuits.
4 cases Jam (@ 90 lb.).	4 Cheese.
4 chests Tea (@ 90 lb.).	6 cases Milk.
2 cases Bacon.	4 cases Candles.
4 cases Tobacco or Cigarettes.	4 bags Sugar (@ 80 lb.).
4 bags Rice (@ 80 lb.).	2 bales Compressed Forage.
2 large sacks Grain (4 small).	2 fanatis Water.

Light-burden camels carry 200–250 lb., plus the saddle, etc.

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Methods of Laying Out Loads.—All loads, both 1st Line and Convoy, must be laid out beforehand in commodities to facilitate convenient loading. Many Supply Depots, for their own convenience, confine their areas, with resulting difficulties for camel convoys using them. For instance, at various times during operations there was a minimum of 6,000 camels working supplies between two Depots with 4,000 camels loading each day; average Supply Depots would offer loading space for about 400 camels at a time, where the minimum space should have been for 1,000. There was a model Depot at Kilo 293, near Bir Salem, which was laid out with the advisory co-operation of a senior C.T.C. Officer. On one occasion, 3,750 camels were loaded there with mixed loads in 1¼ hours. Infinitely the best system is to lay out the loads in long lines, taking in not less than fifty camels in a line; camels are then led in and "barracked" head to head with tails on to the loads; no camel leaves that line until the whole are loaded. The same care and system should be maintained in off-loading at destination.

If the loads are standardised, i.e. bales of hay, tibbin, or packages of stores made up to 160–170 lb. weight and grain in sacks of 80–90 lb., and are laid out at Supply Depots in commodities, there will be very little delay in despatching convoys and fewer resultant sore backs from bad loading.

"Freak loads," which are the exception rather than the rule, will never cause serious trouble.

Top Loading.—Standard weight, as indicated above, will do away with the necessity of top loading as a means of increasing the carrying

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capacity of the camel. All cases of this which occurred were directly due to this fault in the supply system. A certain weight of stores had to be transported to a certain place in a certain time by a certain number of camels. The stores were made up in packages which could not be termed suitable camel loads. To make up the weight carried daily an extra package had to be loaded on the top of the saddle, with consequent heavy casualties.

SUPERVISION OF LOADS AND LOADING

BAD LOADS

Nature of.	Reason for.	Remedy.
Wrong balance.	(1) Difference in weight each side. (2) Loosely tied.	(1) Proper adjustment of weight. (2) Re-load.
Swaying load (generally bales).	(1) Loosely loaded.	(1) Re-load.
Over-weights.	(1) Military necessity. (2) Carelessness.	(1) None, but report. (2) Off load and reduce.
Broken packages.	(1) Rough handling.	(1) Refuse to load.
Top loads.	Top loading is placing an extra package or packages on the top of the saddle, and is done, of course, with packages also placed on either side of the saddle. Top loading, except in cases of extreme urgency, should be discouraged. It imposes an extra strain on the arch of the saddle, which becomes sprung and "drops"—to produce sore withers.	
Freak loads.	(1) Military necessity. (2) Ignorance.	(1) None, but report. (2) Refuse to carry.

In the September and October 1916 operations at Maghara, Sinai Desert, extreme difficulties were met in the conveyance of water over long distances. Operations were being carried out in a district where the only water supply was in the hands of the enemy. The nature of the country, desert sand, made horses or mechanical transport ineffective, and, therefore,

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necessitated the employment of Camel Transport to convey water to Zagadan, where a reserve water dump was created. 200-gallon capacity galvanised-iron fanatis were carried. Their measurements were approximately 4 feet 6 inches × 4 feet 6 inches × 4 feet 6 inches, and apart from the great disadvantage of weight, their cumbersome bulk was a serious working handicap to the camel. Other examples of "freak" loads are telegraph poles, 5-seat latrine tops, and the large wine barrels, which were used for the storage of water in the 1st Line.

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CHAPTER VI

CAMEL TRANSPORT AT WORK

Introduction

The duties of a C.T.C. Company in the Field are best defined under two headings:

A. On 1st Line to a Division.
B. On Convoy Column.

The work is always a continuous strain on personnel and animals. Long hours are generally unavoidable, as, after carrying out their transport duties, which invariably—especially during active operations—commence in the early hours of the morning and continue till late in the day, the personnel then have to attend to the feeding and grooming of their animals and other details of stable management. Of the two duties, the Company on Convoy is working under the better conditions, as the Company is camped together in one area and is, therefore, under the immediate supervision of the O.C., and receives the full benefit of its entire British personnel. That on 1st Line is in a very different position; it is scattered amongst Brigades and units, and cannot, therefore, receive the same care and attention from the British personnel, both as regards animals and native personnel, also equipment.

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In the early days of the Corps the work was made doubly hard and trying owing to the lack of knowledge of camel transport possessed by the different Headquarters and units; they were also some little while before they realised that the Corps, although it was raised locally with Egyptian drivers, had a definite organisation and establishment, and that, if it was to carry its duties efficiently, must be treated in the orthodox Army manner. A good example of the above is found in an extract of a report from the A/Deputy Inspector, East Force, dated Romani, August 11, 1916:

"Whether it could be effected or not, I do not know; but as regards detailing of 1st Line Transport, no regard seems to have been taken of the organisation of the Companies. The five Companies were treated as one, and the result was chaos, and animals and men suffered. Small detachments of different Companies were split up, with the result that practically the services of all the Transport officers were lost and the animals and men suffered unnecessarily. The camels were to an extent wasted, there was a leakage, and camels were being worked night and day continuously."

Matters, however, greatly improved as time went on and the value of the camel became more fully realised and understood by the Force.

A. On 1st Line to a Division

Difficulties.—The work of transporting rations and water for all the personnel of each particular unit of a Division, together with forage for animals, ammunition for rifles and guns, and stores of all

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kinds for engineering and signal services, from railhead and supply dump, falls upon the 1st Line Transport allotted to each unit. To this must be added the transport of tents and baggage when the Division moves and the passing down of casualties from the scene of operations to the Field Ambulance.

The initial difficulty, from a C.T.C. point of view, was that of supervision for controlling Companies and Sections when operations necessitated their being worked other than in their organised formations.

When small batches of men and animals were spread all over the country, the best could not be got out of them, owing to their being split up in these small fractions and handed over to inexperienced Divisional Transport Officers, many of whom knew no Arabic and understood little about camels. The consequence of this was, that camels were often improperly used and overloaded, with resulting sore backs and eventual casualties. There was also a tendency to hurry loaded camels beyond their natural pace and to ride and trot burden camels, all of which could have been checked had proper supervision by the Camel Officer been possible.

It also not infrequently happened that a unit would have to move camp hurriedly, without informing the Company from which the camels were allotted, and a great deal of time would be wasted and trouble caused before it could be located by the Camel Officer.

The work itself fell under two classes:

(1) When movements and actual operations were taking place.

(2) When the troops were resting.

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In the former case, animals would sometimes be away for days, often being overworked, underfed, and not watered. Then would come the period of recuperation, when a certain amount of supervision could be exercised and the wear and tear remedied to some extent.

Another problem was that of languages. A small party of Egyptians could not be relied upon to carry out its duties when away from its own British personnel, and difficulties often arose from the officer or N.C.O. to whom they were attached being unable to give orders in Arabic and exercise that supervision which is so essential with the Egyptians of this class.

The difficulties of loading camels were constant and numerous, that of weight being, perhaps, the greatest. It was often found that the maximum weight would be exceeded, very frequently innocently, owing to the difficulty of judging the weight of the various articles and commodities to be carried. Another difficulty of loading was that of knowing the weights but being unable to distribute them evenly to each camel. When certain camels were not carrying their correct weight, it resulted in the other camels having to carry more than their standard loads. The following extracts are given to illustrate difficulties of 1st Line work:

"At present, when a camel convoy makes a road, wheel traffic cut it up and are even inclined to try and turn the camels off."

"Great congestion of traffic owing to bad condition of roads—camels in great difficulty on wet ground—great difficulty owing to slipping in wet

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wadis just south of Supply Depot—difficulty of keeping camels barracked in mud, drivers slipping and falling with loads—open bales of hay laid down to provide footing."

"First Line camels unable to get forward with food and ammunition on slippery hills. One Brigade have ammunition and food man-handled up by camel drivers."

"Immediately after the morning feed yesterday, on mobile rations, the camels were taken out to carry water for the various units of the Brigade. They were again demanded at 14.00 hours, to assist the Brigade to move to its new site. They arrived there at about 22.00 hours and were immediately taken down to Beersheba to draw water for the Brigade, returning to their lines at daybreak this morning. The Camel Officer was then able to feed them for the first time in twenty-four hours; after about four hours' rest, they proceeded into Beersheba to water, and when this was completed were taken out to the Brigade dump—two hours' journey—to draw rations. This, the Camel Officer informs me, is in order to rest the wheeled transport. I would point out that neither camels nor personnel can stand such treatment. The camels have lost the condition of months in the last fortnight, and are now looking worse, etc. They have not been allowed to water at their proper times, and I have seen camels brought in from the Division which have been respectively four, five, and six days without water. Unless this Company of camels is treated in a more reasonable and sensible manner, the camels will shortly be useless."

"In connection with this same unit (a Field

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Ambulance) the O.C. Company informed me that the camels had been hurried from their lines and loaded up for moving to a new site six times in the last two days, and on each occasion the order had been countermanded. Two hundred and sixty-four camels of this detachment were sent out to carry R.E. stores at 08.00 and 11.00 hours on the 27th inst. None of these camels was returned to camp by the unit for which they were working. One hundred and sixty-one of them were found by the O.C. at noon on the following day at Imara Station, having been kept there, loaded, the whole night; this, owing to their not knowing where to move. The remaining 103 camels were only returned to camp later in the afternoon."

"(In the Hills.) At present, we have not had any continuous spell of wet weather. It has mostly lasted for three days and been followed by an interval of dry weather; thus, both men and camels have had opportunities of recovering. However, in my opinion, if we have any long spells of wet, say a week, we shall lose 25 per cent. of the camels and so many of the men that it will be impossible to carry on. If the men are billeted in houses, they will stand it better; similarly, the camels, if full rations of forage were issued."

(The question of excessive sickness of personnel around Jerusalem gave rise to anxiety.)

"A great number of men are suffering from sore feet, due to marching on stones. Only 60 per cent. of the Company are, so far, provided with billets. Villages, at present available, are used for white troops and for large numbers of refugees from areas under shell-fire. After the next advance (they are getting used to advances

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by now !) it is hoped to get all native personnel into houses; for the present, many of the men are compelled to lie on terraces on the hill-sides with the camels. The cold is at times intense on the open plateau around Jerusalem and the men are feeling the cold more than the camels. They have no stomach for wet and cold. (This refers to the men—it is astounding to all to witness the endurance of the camel under circumstances so foreign to its natural environment.)"

From the foregoing a good idea can be gathered of the many difficulties encountered in working Camel Transport for a British Division. These are, however, still more increased when it is an Indian Division, as will be seen from the following extract of a report:

"Recent experiences of a half Company, doing 1st Line Water Transport to a Regular Indian Division, clearly show that the question of Camel Transport with these troops (who, it is commonly assumed, are experienced and skilled in the handling of the camel) is one which presents more difficulty than that of a British Division. The utter disregard of such simple things as the natural pace of the animal, together with its carrying capacity, tend to show that the Indian rank and file cannot be relied upon to give the proper attention to the animals allotted to them, unless under direct British supervision. During operations, the animals were distributed throughout the Division, each unit drawing its allotment and taking charge of them until the brigading of the animals under a C.T.C. Officer was possible. In every instance

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where C.T.C. personnel were not directly supervising, both animals and Egyptians were overworked to an excess. No consideration was shown for the Egyptian driver. The fact that he had marched the whole day with the Infantry was always lost sight of on arrival at destination, when he was forced to make two and three journeys to the nearest water-supply (often a mile distant) to fetch a supply over and above the authorised mobile allowance. With the Indian, the water question is a problem demanding close scrutiny before any allotment of water-carrying animals is made. His religious rites together with his abnormal water-drinking propensity must not be lost sight of. His allowance is never sufficient and, unless a good margin is allowed, the animals supplying him will suffer severely. Detachments of three or four camels with a unit were worked entirely by the Indian placed in charge, and he saw that the excessive requirements were always fulfilled, irrespective of the drivers or camels. Daily cases came under my notice of camels being actually under saddle from 12 to 16 hours at a stretch; result—sore backs and debility. Again, in order to ensure that a water issue was made upon the immediate arrival of a unit in camp, the animals were forced to keep up with an Infantry column. This meant that the camels and drivers had no halt whatsoever, unless under the supervision of their own British personnel disregarding the Infantry pace. This was finally obviated by brigading as many of the animals as possible, prior to marching, and placing them under Corps supervision. This could not be carried out in all cases; small detachments, moving independently,

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carried on in the same inconsiderate way—as results proved. After seven days, one unit had incapacitated 60 per cent. of its camels. The fact that the camels were attached from a composite unit may have accentuated the utter disregard of the first principles of animal management. To ensure animals retaining their fitness and condition with a Division of this kind, direct and constant supervision by C.T.C. personnel is essential, and this would involve, during active operations, the increasing of the British personnel by 100 per cent. on the present establishment. From September 19, 1918, to November 4, the Division incapacitated 30 per cent. of its camels; this, in an advance where the distance between the Remount Bases and operations is daily increasing, is disastrous."

Distribution.—There has always existed a divergence of opinion as to whether camels on 1st Line to a Division should be kept together in Brigade Area Camps or remain in detachments, under the care of the units to which they are attached.

On the whole, Divisions, Brigades, and Units started with prejudice in favour of non-brigading. Their reasons were:

(i) Delay in drawing camels from Brigade Camp.

(ii) Restriction of freedom in use of what, on the establishment, were *their* camels.

(iii) Extra work for escorts, camels, and drivers, owing to distances to and from units.

(iv) A Brigade Camp is a bigger mark and must be farther back than a Battalion Camel Camp.

(i) and (iii) are compensated for by greater

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attention received by camels with C.T.C. personnel, who are *responsible directly* for fitness; under other arrangements they are not.

(ii) is necessary because camels and drivers lend themselves to neglect and overwork.

(iv) is a matter of locality and Brigade arrangements.

The important things which cannot be undertaken except by C.T.C.—viz. all veterinary treatment, all native discipline, all care and renewal of equipment, and the keeping in practice of all rules as to march discipline, etc., learned by C.T.C. from experience —make brigading of camels necessary for continued efficiency of the Transport.

Where units had taken over the camels, the following faults occurred:

(1) Short rations. (As an instance, on one occasion every unit in a Division accepted, without complaint, 8 lb. of grain and little or no tibbin for their camels.)

(2) Irregular watering. In many cases unavoidable, but often due to forgetfulness, showing lack of interest and spelling death to any animal.

(3) Camels remained saddled for long periods unnecessarily.

(4) March discipline disappeared.

(5) Grooming disappeared.

(6) Care of saddles and equipment disappeared.

Whatever orders are issued by Divisions, Brigades, and Units, the men from Battalions, etc., detailed to look after the camels, have not the same ability or facility to deal with the camel and driver. The native driver is the first to fall away in efficiency when detached from the immediate control of C.T.C. Officers, N.C.O.s, and his own Bash Rais.

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For efficiency, there exists no doubt that camels should be brigaded and remain under the immediate care of the C.T.C. personnel.

Camels.—Both heavy- and light-burden animals were used on these duties, and, although not preferable *when heavy burdens are available*, the light burdens were found quite successful and suitable for the work.

Establishment.—The establishment of camels allotted to a Division varies according to the operations taking place and the country to be covered. The main alterations in this Corps can be given as:

First half of 1916 . .	Approx. 4,000 camels.
Second half of 1916 . .	„ 3,000 camels.
Middle of 1917 . .	„ 2,000 camels.
First half of 1918 . .	„ 1,200 camels.

The steady reduction was due to the improved possibilities of using wheeled transport, as the general advance went on and the Forces moved from the desert sand to the harder ground and roads.

Rules.—Over and above the general rules laid down for march discipline, the following should be adhered to in regard to 1st Line Transport:

(1) Camels should be brigaded under C.T.C. arrangements for rations and discipline.

(2) D.H.Q. should deal only with the O.C. the Company, who becomes Divisional C.T.C. Officer, and B.H.Q. with the senior C.T.C. Officer in their Brigade.

(3) When moving from camp, the camels of each unit should be assembled with the remainder of the camels of the Brigade and the whole move

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off together. An exception would only be made when the 1st Line Transport is following its own particular unit.

(4) Every facility should be afforded, in order that Regimental Transport Officers and their personnel be instructed in the general principles of C.T.C. work; they are then able to assist in the work of the camels attached to their units.

(5) Regular watering and feeding of camels must be insisted upon by C.T.C. Officers. This is most important, though in many cases not fully appreciated by Divisions.

(6) Divisional spare camels should be kept at D.H.Q., under immediate care of O.C. C.T.C. Company, who will use them as remounts to replace casualties in Brigades.

B. On Convoy Column

As stated previously, a Company carrying out these duties has much better opportunity of looking after its personnel, animals, and equipment than one on 1st Line work. It must not, however, be imagined that it has a less arduous time. As a matter of fact, the contrary is generally the case, as whether the conditions of weather are good or otherwise, convoys have to be run.

Work.—There always exists a certain difficulty in keeping the work of convoy and 1st Line Companies distinct, one from the other, and in preventing the Divisions from putting too much on the camels in order to save their horses. All reports received at Corps Headquarters bear this out. The camels which should have been resting were, in many cases, used to help the Horse Transport out, and often were even detailed to accompany

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the trains. They were also kept standing with their loads on their backs for long periods on arrival, and even then used to carry out the 1st Line duty of distributing the supplies to the unit dumps. Such treatment was not denied by Divisions, but they always covered themselves by stating that the exigencies of the situation demanded it. The following gives a typical instance of the want of consideration shown to a Camel Convoy:

"I reported to Supply Officer, Karm, at 12.00 on the 3rd inst. and loaded up immediately, leaving the Depot at 13.00. A N.C.O. from the Divisional Train was attached to my convoy in order to keep up communication with the train while on the move. Before leaving Karm, I was instructed by O.C. train to proceed to Khasif and there await the arrival of the train. I arrived there at 14.00 and halted.

"On arrival of the train, instructions were given me to proceed immediately to the barricade at Beersheba, whither the train would proceed after the horses had been watered and fed. I was also informed that another N.C.O. of the train would keep in touch with me between Khasif and the barricade, but this was never carried out. I left Khasif at 15.30 and arrived at the barricade at 20.00. Between 20.00 and 24.00 I endeavoured, together with the N.C.O. attached to me, to get in touch with the train—but without success. At 24.00 I met a Sergeant-Major of the train, who informed me that the train had halted some distance from the barricade, that they would stay there for the night and proceed to the Advanced

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Dumps at 04.00 on the morning of the 4th. I off-loaded and fed immediately. I loaded up again at 03.00 and was ready to move off at 04.00. I intended feeding the camels again after I had off-loaded at the Advanced Dumps, which are two hours' journey from the barricade. The train did not move off at 04.00, and I instructed the N.C.O. attached to my convoy to proceed to the train and find out the exact time of departure. He was informed that they would move off at any moment. The train did not leave the barricade until 12.00. Between 04.00 and 12.00 I made enquiries as to the time of their departure, but could get no definite information. I moved with the train at 12.00, arrived at the Advanced Dumps at 14.00 and off-loaded immediately. Camels carried loads 21 hours out of 25."

Difficulties of Transport.—The country covered had presented little difficulty to camels, being one continuous stretch of sandy desert, until the winter of 1917, when the work had to be carried out on the Palestine Plains and amongst the Judæan Hills. In many cases, the troops were entirely dependent upon camels for their transport. Often there were mere goat tracks for the animals to proceed along, and these were extremely difficult to manipulate, owing to their rocky and slippery surfaces—bad enough in fine weather, but in the wet a nightmare. Many of the convoys experienced unheard-of difficulties and hardships in reaching their destinations. Where there were roads, they had become quagmires; the plains had developed into seas of mud and slush—in many cases knee-deep; whilst the wadis which had to be crossed

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rose enormously. The natives and camels, in consequence, suffered severely from cold and exhaustion. How the Companies ever carried out the calls made upon them is well-nigh inconceivable. One lot of convoys had to wade across a track of country several miles of which was under about two feet of mud, intersected by wadis which were considered impassable. Instances could be witnessed of camels moving along whilst empty limbers, pulled by four or even six mules, stuck with their wheels over the axle in mud. Nevertheless, the work was carried on, although, in many cases, convoys, which under normal conditions could have been on the road about ten hours, took two to three days to reach their destination. Numerous are the tales of hardship endured in order to get the supplies forward, when all other forms of transport, even the railways, had come to a standstill.

Difficulties at Supply Depots.—A considerable difficulty, experienced at nearly every Supply Depot where Convoys had to load or off-load, was the want of adequate space for laying out the loads properly (see chapter on "Loads and Loading") and manœuvring large numbers of camels at a time. Much time was lost through lack of labour to lay out the loads correctly and in commodities. The congestion at some Depots, through divisional trains, motor-lorries, and tractors all being loaded up at the same time, very often caused considerable delay in a convoy moving off, although scheduled to march at a certain hour. These delays also caused the camels to be under load much longer than would otherwise have been necessary. In many cases the drivers had to carry the loads

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fifty yards to their camels, owing to impossibility of getting their animals any nearer to the dump. In wet weather these difficulties were all increased enormously, as the camels would not remain "barracked" in the mud, and the drivers had considerable trouble not only in keeping on their feet themselves but in preventing them from slipping and falling with their loads. Under such conditions the tempers of the drivers were tried to a very dangerous point, and their spirits were, in many cases, broken before they ever marched out.

Daily Distances.—A good average daily march for a Company, on continuous and regular convoy work, is about fifteen miles, but, under the necessity of military operations, some extremely long marches have been made, both in summer and winter. Instances of twenty-five to twenty-seven miles daily are quite numerous; this means heavy strain upon the camels, as they are for such long stretches under load.

Pace of a Convoy.—The average pace of a Camel Convoy is, generally speaking, approximately two and a half miles an hour. Under favourable conditions, good hard tracks, and cool weather, the Sudani, Somali, and larger types of Egyptian camels have without urging averaged three miles per hour for a distance of twelve to fifteen miles. On the other hand, under the same conditions, the Maghrabi and heavy Algerian camels but rarely average two and half miles per hour. For this reason, the slowest-moving and heaviest-laden camels should always be put at the head of a convoy.

Light-burden Camels on Convoy.—The three types of light-burden camels used in the Corps—Egyptian

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female, Somali, and Algerian—have all been subjected to convoy duties, especially the two last named, but they are not, *as compared with the heavy-burden animals*, a success. They receive a forage ration very little less than the heavy-burden, whilst their carrying capacity is only 250 lb. against the heavy-burden's 320 lb. Nevertheless, during phases of the various operations, they have been obliged to carry 320 lb. and over; particularly so in 1916 and early 1917, when they were first introduced into the Corps and before the Supply Depots could issue with weights suitable for making up their correct loads. This was considerably improved upon later. Although they have carried these heavy loads and done the work without a hitch, the practice of overloading these classes of camels is to be deprecated, as they suffer from the "after-effects" much more than the heavy-burdens.

Their pace is a good one, averaging, over favourable country, a good three miles per hour; they are mostly stout-hearted and will keep up a good speed for hours on end. On several occasions, they have carried excessively heavy loads, over distances varying from twenty-two to twenty-six miles, without being off-loaded.

They have been worked over varied country:

Plains—heavy with deep sand or knee-deep in mud and slush.

Hills—heavy sand, hard-metalled roads, or rough, stony mountain tracks.

In all cases they came through satisfactorily. It is often stated that the light-burden camel does not withstand bad weather conditions so well as the heavy-burden, and the very severe winter of 1917–18 proved this to be correct.

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The light-burdens were rarely used for cacolet carrying. Heavy-burden animals are always attached to light-burden convoys for this purpose. A serious drawback with these classes of camels—especially the Somali—is their nervous temperament. This is particularly so in Supply Depots, where one invariably meets with great congestion; the noises and confusion cause them to be continually rising and dancing about during loading. Thus the drivers are prevented from giving the "finish" to their loads which is so necessary for efficient convoy work.

The light-burden camel is not to be advocated for the duties where "heavies" are obtainable, but they are very suitable for mobile columns of cavalry, owing to increased speed.

Of the classes mentioned, the Somali is, without doubt, the best type.

Camel Convoys in Arabia.—The convoys were found by a detachment of the Egyptian Camel Transport Corps, lent by the C.-in-C., E.E.F., to assist in convoying supplies from Akabaa to Wahada for the Arab Forces under the Emir Feisal, which were operating against the Turks at El Maan and other stations on the Hedjaz Railway.

The Detachment, consisting of one O.C., 3 Section Officers, 10 other ranks, 428 Egyptians, and 700 Somali camels (the British personnel being mounted on hageens), left K.293, Palestine, on March 2, 1918, proceeding by march route to Akabaa, via Beersheba and the Wadi Araba.

From Beersheba the Detachment was escorted by a platoon of the Bikanir Camel Corps and guided by a party of Arabs from the Ibn Ghazi

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tribe, arriving at Akabaa on March 29, 1918, after a trip, lasting nine days, over exceedingly wild and mountainous country.

After four days' rest at Akabaa, regular convoys were organised for convoying rations, forage, and ammunition forward to Wahada—a distance of approximately 146 miles there and back.

This trip was divided into eight marching days of eighteen miles, the first day's march being through a deep ravine, the second across the Guerra Plain, and the third and fourth over hilly country to Wahada (this included a steep climb up the Nagb Eshterra), the reverse order on return. The camels were given two days' rest after each trip. These convoys were run continuously up to the middle of July, the camels then being handed over to the Sherifan Forces. Two of the Section Officers were lent to advise. The average strength of the convoys was 650 camels, of which 150 were required to support the convoy; this small number was only possible by sending back unloaded camels on the first and second day's march, these bringing out rations, water, and forage to the returning convoy on the seventh and eighth days.

In addition to the big convoy, several smaller convoys were despatched at intervals to El Guerra (72 miles) and Abu Sawama (110 miles), carrying petrol and supplies for the R.A.F.

A convoy of 51 camels accompanied the Force which successfully attacked Tel-el-Shahim on April 19, 1918.

The advisability of choosing Somali camels for this work was very evident, as they had no difficulty in circumventing the steep paths met with during the trips. These light-burden camels had to carry

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loads of 320 lb., and the wonderful way in which they kept their condition was proof of their suitability.

After April, marches had to be done in the early mornings and evenings, as the heat during the day was unbearable—especially in the Wadi Itham (the deep ravine previously referred to).

The water question was one of the chief difficulties; three days' supply had to be carried on the convoy for the use of the personnel, fanatis being filled at Wahada for the return journey. Camels had to go four days without water on the trip, but were always given an extra drink before leaving Akabaa. At Akabaa, the camels were watered near the edge of the sea, fresh water being obtained by digging in the sand. The camels were watered at Wahada from a running stream.

Mange is very prevalent in the Hedjaz. The Detachment camels were kept well "dressed" and were only very slightly affected.

The health of the British personnel was good, one officer only being evacuated to hospital, suffering from dysentery. That of the Egyptian drivers was indifferent; there being, towards the end, many cases of relapsing fever. Everything possible was done to keep them fit; clean underclothing was issued, all were disinfected and their clothing fumigated at the end of each trip. The disease was probably due to their being out for eight days without being able to bathe themselves.

A Difficult Piece of Convoy Work, 1918

The following is an extract from a report on the first operations in the hills of Moab, east of the

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River Jordan, against the Turkish forces at Amaan, mostly in wet and adverse weather conditions :

" In practically every instance, the ground over which the camels worked was of the worst possible, being extremely hilly and stony. The 'Anzac' Convoys marched by routes which were simple goat-tracks in the sides of the hills, only wide enough, in many cases, for one-string camels to pass at a time. At one village three large rough steps had to be traversed. This country was bad enough in fine weather, but on wet days it became excessively difficult and trying, and almost impossible for camels ; still the convoys persevered and never failed to get the supplies forward to the fighting troops.

" Much lameness was caused by camels slipping in the mud and by damage to their feet on the stony ground.

" Distances were approximately : Shunet Nimrin to Es Salt, 16 miles ; average time taken by convoys, 10–11 hours. Shunet Nimrin to Ain Sir, 17–18 miles ; average time taken, 12–13 hours. This latter was a particularly bad trek.

" No 3 Convoy, working from Ain Sir forward, had to traverse extremely bad and difficult ground, which was, in many places, marshy. The camels were often long hours under their loads, owing to the existing situation and fluctuation of the battle. Coupled with this fact, they had to work at night. This same convoy had a most trying time during the withdrawal, marching from 16.00 hours on March 31 until 14.00 hours on April 1, when they reached Shunet Nimrin. The most difficult part of the journey had to be done in complete darkness

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with heavy rain falling, the ground thick with mud and exceedingly slippery. To make matters worse, the convoy was greatly harassed and broken by other units of the Force on the single track.

"During the operations, everything possible was done—as far as military exigencies permitted—to save men and camels. Even so, animals were in many instances very long periods under loads and the personnel had to work lengthy and continuous hours. Owing to nature of supplies and size of bales and sacks, about 50 per cent. of the camels in all convoys were overloaded."

Areas Worked Over

The ground over which the Companies have worked can be divided into seven areas:

Western Desert.—W.F.F. Sollum Expedition, N. African Coast, over coastal plain with marshy areas, between Barani and Sollum. Included in W.F.F. Area are operations in Fayoum and Wadi Natrun, Baharia and Khargeh Oases, and the occupation of Siwa. Camels used in the Nile Valley—Minieh and Samalut, etc. The desert in these parts is mostly flat, hard, and flinty, varied by belts of shifting and very heavy sand-dunes.

Sinai Peninsula.—Whole length of the Suez Canal and Sinai, south of a line drawn due S.S.E. from Rafa, Katia District, Romani, El Arish, Maghdaba. Also Nekhle and Bir Hassana Expeditions. All, with the exception of the last-mentioned operations, are over heavy, undulating sand. The Nekhle Expedition was over country very hilly and stony in parts.

Palestine Plains.—Rafa to Beersheba on the south and to Gaza on the north. Undulating

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limestone plain. Good going generally. Sandy near coast. Deep wadis. Gaza to Jaffa: Heavy cotton soil—impassable when wet. Deep wadis. Sandy on coast.

Palestine Hills.—Jerusalem and hilly country. Rocky and precipitous, roads almost non-existent with exception of Jaffa-Jericho road, W.–E., and Beersheba, Hebron, Jerusalem, Nablus Road, S.–N. Stony and rough in summer; in parts, flinty. In wet weather, clayey ground becomes water-logged, very heavy and slippery. Almost impossible for camels, except where roads can be metalled with stones. Only camping-grounds are stony terraces in hill-sides; very difficult of access in wet weather.

Jordan Valley and Hills of Moab.—To Jericho. Metalled road through limestone hills. Jordan Valley good going in plains in summer, but very slippery in the wet. Hills of Moab similar to the Judæan Hills, but more covered with soil and less rocky outcrops. Clay soil, very slippery and holding after rain. In fine weather good going in certain parts. In wet weather almost impossible for camels. No roads except from Jericho to Es Salt.

Syrian Area.—Haifa–Beirout–Tripoli–Damascus–Aleppo. Coastal plain always good in summer, though very narrow and dangerous where the hills run down the coast, especially "The Ladder of Tyre," where road is extremely steep, very narrow, and with a dangerous drop to the sea. Dangerous in places during winter on account of slippery nature of clay and limestone soil. Interior roads very steep and narrow with precipitous drops. Fairly good going in summer, but dangerous in wet

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weather. Camping-grounds, except on the shore, bad.

Arabian Area.—(See para. "Camel Convoys in Arabia.")

Mounts for British Personnel

The question of mounts for the British personnel of a Company, either on 1st Line or Convoy duty, was always a difficulty.

The original establishment allowed for one horse and one hageen (riding camel) for British ranks; experience has proved the suitability of this allotment in country for work in which the C.T.C. was formed.

The large area covered by a Camel Camp makes it essential for Officers and N.C.O.s to be mounted on all parades, particularly feeding and grooming, and for this purpose a hageen is useless. Horses must be used, and, as the double work in camp and on the road makes a single horse per officer or N.C.O. insufficient, a hageen (as a supplementary mount) is most useful in certain conditions.

In thick sand a hageen is more suitable for convoy work than a horse, and, on ground where there is plenty of room for the camels to move in short columns, he can do the work as well as a horse, except on wet and stony going. Over dry and sandy country the combination of horse and hageen for British ranks is, therefore, suitable; but under conditions such as those experienced in Palestine and Syria the hageen is useless for the following reasons:

In hilly country and cultivated areas it is necessary to march convoys along the roads in single file, or at the most two camels abreast.

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Here a horse is necessary, as the hageen is not fast enough efficiently to supervise a long line of camels. In wet and muddy ground it is dangerous to ride a hageen faster than at a walk. On narrow tracks, such as Camel Transport had very often to use in the hills, hageens cannot pass convoys on the march. On stony ground, particularly when wet, hageens are very liable to lameness. Generally it is more trouble to get on and off a hageen than a horse, and a N.C.O. properly to carry out his duties on the march very often has to dismount to look into small troubles that occur on the road. On the other hand, the work of a C.T.C. Officer or N.C.O. when his Company is engaged in operations will break down the strongest horse. The establishment should, therefore, be a horse and a hageen for British ranks in desert country, and in inhabited country two horses.

General March Routine

The following rules are drawn up from experience gained in the Egyptian Camel Transport Corps:

(1) Always march camels off roads, if possible.

(2) Always march in a formation giving the widest front possible, thus the British personnel are better able to control the drivers and supervise the convoy.

(3) Whenever possible, a fatigue party, drawn from the resting Companies or Sections, should be furnished to assist in loading a Convoy.

(4) Five per cent. spare camels should always march with the Convoy; these should be available to replace any casualties on the march.

(5) A column should be incessantly watched by Officers and N.C.O.s. Any loads not correctly

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placed or which may have worked loose should be immediately adjusted, the camels being withdrawn from the line and allowed to catch up later; the remainder of the column need not be halted.

(6) Any camels showing distress must have his load removed to one of the spares immediately.

(7) Riding of burden camels should never be permitted, unless for some very exceptional reason, such as extreme fatigue of the drivers through excessive and continuous overwork.

(8) Whenever possible on the march, each driver should invariably lead his own two camels abreast, if there is a third, this should be tied behind one of the others. On roads used by other forms of transport each driver ties his camels in a string and leads the first.

(9) Two days' emergency rations and forage should always be carried. Each camel carries his own forage, which is kept in a sandbag on the top of the saddle.

(10) Camel transport should always be marched independently of wheeled transport, owing to the differences in pace.

(11) The slowest-moving and heaviest-laden camels should always be put at the head of a Camel Convoy column.

(12) A halt of five minutes at the end of the first hour of marching and ten minutes at the end of every subsequent two hours should be made to allow the animals to urinate and for the adjustment of any loads which may have worked loose.

(13) On convoy duties, every endeavour should be made to work them in such a way as to give them one day's rest in every three. This allows the personnel to comply with the standing routine

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orders of stable management, etc.—very necessary if the animals are to be kept fit and the equipment in good condition.

(14) On no account should a burden camel be trotted, either loaded or unloaded. This is especially likely to happen when camels are withdrawn from a column to have their loads adjusted and have to quicken their pace to catch up.

(15) Particular attention should be given to ensure that the drivers are in possession of their water-bottles and that they are filled before moving out on a march.

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CHAPTER VII

SYSTEM OF ACCOUNTS IN GENERAL USE IN THE CAMEL TRANSPORT CORPS

Accounts and System of Payments Observed by Companies in the Field

Each Company Commander held an Imprest Account and consequently kept an A.B.69, rendering his statement of accounts monthly on A.F. N/1531a, compiled from his A.B.69.

The principal payments to be dealt with by Company Commanders were:

1. Payments to British Other Ranks, these being made in the usual way on duplicate Acquittance Rolls—A.F. N/1513—and entered in the man's A.B.64 and in A.B.69 and A.F. N/1531a.

2. Payments to civilian subordinates, i.e. Egyptian doctors, etc., on duplicate A.F. 0/1603a, and entered in A.B.69 and A.F. N/1531a.

3. Repayments of advances made by the Recruiting Authorities to Egyptian Personnel, these advances being debited to the Egyptian personnel on Pay Sheets A.P. and S.D. Form 2614/414 as advances by the Recruiting Authorities and refunded when worked off, credit being taken in A.B.69 and A.F. N/1531a.

4. Advances to Egyptian Personnel in the Field, entered in detail on Pay Sheets A.P. and S.D.

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2614/414, and in total in A.B.69 and A.F. N/1531a, these advances being restricted to PT.50 per man per month to prevent the men from squandering their money, as it was found the majority were inclined to do. If a man wished to remit to his family, however, he could do so to the extent of his credit balance, the remittance being debited as an advance and forwarded by cheque by the Officer Commanding the Company to the Base Depot, who returned the registered letter receipt to the Officer Commanding the Company, to be handed to the sender of the remittance. Pay Sheets of Egyptian Personnel, as will be seen from specimen attached, embodied a ledger account for each man, made up monthly. These Pay Sheets were forwarded at the end of each month to the Command Paymaster in Egypt for verification, audit, and observations, if any. The Pay Sheets were made out in triplicate, two copies being forwarded to the Command Paymaster in Egypt and one retained by the unit. When men were sent to the Base Depot for discharge or transfer to another unit, their accounts in the Pay Sheets were made up to the date of the casualty and a Last Pay Certificate (A.P. and S.D. Form 2376/414a) forwarded to the Base Depot or unit concerned.

Last Pay Certificates and Death Certificates were also sent to the Base Depot for men killed or died. For men admitted to Hospital a Last Pay Certificate was sent to the Base Depot if the casualty did not report back to his unit within seven days.

If the casualty was evacuated to the Base Depot by the Hospital he was paid off if medically unfit, or returned to duty. (This will be dealt with more fully in Base Depot Accounts.)

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Accounts and System of Payments Observed by the Base Depot

Duties Carried out by the Base Depot Records Office

The Egyptian Personnel were recruited for a term of six months, each recruit receiving an advance of £E.3 from the Recruiting Authorities to enable him to make provision for his dependents whilst he was serving with the Army. The recruits on arrival at the Base Depot were fully equipped with summer or winter clothing on the scale laid down in General Routine Orders. Batches of recruits were received from the Recruiting Authorities with nominal rolls, in duplicate, combining attestation for service, medical certificate, etc. (A.P. and S.D. Form 4672/4208), giving recruiting number, name, village, and markaz, with columns for the use of the Base Depot. The gangs were checked on arrival and casualties noted.

Upon a gang being posted to a Company, each man not a casualty was given a Company Number, on a disc which was fixed round the neck by string and sealed, this number being noted in the space provided on the nominal roll, the duplicate copy of this roll being sent with the men to the Company and the original copy retained by the Base Depot. On receipt of Acquittance Rolls for these gangs from the Recruiting Authorities, the Company Numbers were entered and casualties marked "Repaid by Base Depot," the Company concerned being responsible for the refund to the Recruiting Authorities of the remainder of the Advances shown.

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Before the Acquittance Rolls were sent to the Companies they were analysed, the analysis (pro forma attached) showing to which Company each gang was posted and the amount to be refunded by the O.C. Company, and, in the case of casualties, the amount to be refunded by the Base Depot. Two copies of the analysis were sent to the Recruiting Authorities and one copy retained by the Base Depot for reference.

When these men were returned to the Base Depot for discharge or transfer, or otherwise disposed of, such disposal was noted on the combined nominal roll and attestation form, thus completing the records of each.

In addition to the above, Records Office was responsible for the replacement of all time-expired men, as such became due for discharge, including all specialists, i.e. clippers, saddlers, servants, etc. —and casualties as they occurred. These casualties were obtained from the consolidated weekly state received from G.H.Q. and the Records.

Duties Carried out by the Base Depot Pay Office

(*A*) The paying off and discharge of all time-expired Egyptian Personnel from all Camel Transport Corps Units.

(*B*) The payment and discharge of all Egyptians evacuated from Hospital medically unfit.

(*C*) The settling of the estates of all Egyptian Personnel killed or died on service.

(*D*) The forwarding of remittances to the relatives and dependents of the Egyptian Personnel serving in the units of the Corps.

The paying of British Other Ranks, Egyptian

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officers and clerks and Egyptian Personnel of the Base Depot.

An enumeration of the forms in use in connection with the above, with explanatory notes, would appear the clearest way of explaining Pay Office duties.

1. Form of Last Pay Certificate (A.P. & S.D. Form 3075/414a) for men sent down from Companies for discharge time-expired or for batches of men transferred from one unit to another.

2. Form of Last Pay Certificate (A.P. & S.D. Form 2376/414a) for men admitted to hospital. The rendering of these L.P.C.s was as follows: Officers Commanding Units and Companies rendered to the Base Depot L.P.C.s for all Egyptian Personnel admitted to Hospital who did not return within seven days. The L.P.C.s showed amount due at date of admission to Hospital, being clearly marked "To HOSPITAL." In the case of Egyptian Personnel rejoining their units from the Base Depot as fit for duty, the L.P.C.s were returned. Egyptian Personnel in Hospital were not struck off the strength of the Company until advice was received from the Base Depot that they had been paid off medically unfit or time-expired, etc. For Egyptian Personnel discharged direct to the Companies from Hospitals in the Field after seven days had elapsed, Officers Commanding Companies notified the Base Depot, who returned the L.P.C.s. When L.P.C.s were rendered, the amounts due, as per the L.P.C.s, were shown in the last column of the Unit's Pay Sheets (A.P. & S.D. Form 2614/414) with the remark "L.P.C. TO BASE DEPOT." If a man returned to his unit he was shown in the Pay Sheets for the current

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month with a credit balance as per L.P.C. rendered, in column "Brought forward from last month," with the remark "From Hospital, see Pay Sheets Folio....."

3. Forms of application for L.P.C.s for men awaiting discharge at the Base Depot (A.P. & S.D. Form 3733/414a), used when L.P.C. had not been received. This was liable to occur during operations when men were evacuated under exceptional circumstances.

4. Form of Requisition for Cash used in connection with Pay Duties. Army Form N/1487.

5. Form for entering payments made to civilian subordinates, i.e. Egyptian clerks, etc. Army Form 0/1603a.

6. Form for payments to British Other Ranks. Acquittance Roll, Army Form N/1513.

7. Form sent to Director-General of State Accounts (A.P. & S.D. Form 3619/414) in support of list. (See para. 8.)

8. Form used in the settling of accounts due to deceased Egyptian Personnel. These lists were compiled from Death Certificates rendered by the Hospitals and L.P.C.s rendered by the Companies, and one copy, together with a Form 7 for each deceased man, was rendered to the Director-General of State Accounts. A second copy of the list (without Form 7 in support) was forwarded to the Command Paymaster in Egypt, together with L.P.C.s showing state of the men's accounts; the C.P. in E. checked the amount due at date of death. A third copy was forwarded to the Inspector, Camel Transport Corps (Compensation Department), with reference to compensation awarded to dependents. A fourth copy was

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retained by the Pay Office. Pay Sheets (A.P. & S.D. Form 2614/414) were also sent to the C.P. in E. in support of these lists.

9. Imprest Account (Army Form N/1531a) rendered monthly.

10, 11, 12. Explained in Director of Labour's Instructions No. D.L.2451, dated 25/10/17, attached. The Pay Office rendered these forms only in respect of men actually appearing on the Base Depot Pay Sheets at the time of casualty.

13. Pay Sheets (A.P. & S.D. Form 2614/414) rendered in duplicate to the Command Paymaster in Egypt (one copy retained). These were forwarded in respect of the Base Depot Egyptian Personnel and all discharges from the Camel Transport Corps. Any over-payment or under-payment to men at date of discharge was observed upon by the C.P. in E. in due course, the over-payments being refunded by the responsible party and the amount given up in the Base Depot Imprest Account. A fourth copy of the Discharge Pay Sheets was sent to the Companies concerned so that the Personnel might be struck off the Company strength. Amounts of Fines awarded were entered in the remarks column of the Pay Sheets and deducted from the balance standing to the men's credit.

14. Summary Sheet (A.P. & S.D. Form 3616/414), which accompanied Pay Sheets, a separate summary being forwarded for each Company's discharges. All vouchers in support of Discharge Pay Sheets were retained by the Pay Office.

15. Remittances of money by Egyptian Personnel. These were made as described in para. 4.

ACCOUNTS AND SYSTEM OF PAYMENTS OBSERVED

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BY COMPANIES IN THE FIELD. Instructions were given that:

(*a*) The greatest care should be taken to ensure the correct spelling of names of the payee, which should always be legibly written in Arabic as well as in English.

(*b*) Whenever possible the remittance should be accompanied by an envelope addressed to the payee in Arabic as well as in English, which should be endorsed with the sender's number. Before returning the counterfoils to the respective Companies, the Base Depot should insert on each the Company Number of the sender.

These remittances were made through the Egyptian Postal Service on forms provided for the purpose.

DUTIES CARRIED OUT BY THE CORPS COMPENSATION OFFICE AT THE BASE

This department was responsible that:

1. In the case of Egyptians who had been killed in action or died in the service of the Corps, the dependents, if eligible, were compensated, and if considered deserving of pension in addition, their cases were recommended to the Egyptian Government.

2. Men who were wounded or otherwise incapacitated in the service of the Corps received a gratuity in accordance with the disability, assessed by the Medical Authorities. In cases where the disability was such as to interfere with the individual's means of earning a livelihood these were also recommended to the Egyptian Government for pension based on the Medical Authorities report.

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Gratuity.—On receipt of a Death Certificate, etc., from the Corps Pay Office, a serial number was given to the case, a card for Index Card Box, and an Enquiry Form being then prepared. The Enquiry Form, translated into Arabic, was sent out to H.E. the Mudir of the Mudirieh in which deceased was stated to have lived (marked A). When the form was received back from the Mudir it was checked, and if the dependents stated on the form came under the scale authorised by the British Military Authorities, Form B was prepared, and the Enquiry Form A and B put into a C.R. File and forwarded to the D.A.G., G.H.Q., where the case was given a Central Registry number, and Form C put into the file, which was then sent forward to the Financial Advisor with a recommendation that a gratuity be approved under scale (marked Z). The Financial Advisor, if he agreed, returned the file to the D.A.G., with the statement that he agreed to the amount being approved for payment to the dependents of the deceased. The D.A.G. then approved and forwarded the file to the Command Paymaster in Egypt, who, on receipt, paid the authorised amount into the Bank under the Compensation Account C.T.C., forwarding the file to the C.T.C. Compensation Office with advice of action taken by him.

The case was then checked and, if in order, Form D prepared, a cheque made out payable to the Mudir of the Province and despatched. A record of the above was kept in a book showing the date on which the case was put forward to G.H.Q., together with full details up to payment of the gratuity. Payments made from the Bank

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Account were recorded in a Cash Book kept for the purpose.

When the receipt was returned by the Mudir, the translation was completed, and receipt form forwarded to the C.P. in E., file closed and marked "Receipt to C.P. in E."

After payment was made, if the case warranted recommendation by the Military Authorities for an Egyptian Government pension, Form E was prepared and despatched to the D.A.G., G.H.Q., 1st Echelon, who forwarded such cases to the Egyptian Government, recommending that the dependents in these cases be considered for a pension.

Compensation.—On receipt of Army Form W/3428 from the Hospital Authorities, paras. 3 and 4 were completed (Form F). On completion, Form G was then prepared, and the case went through the same procedure as for a gratuity, payment being made in exactly the same way, with the exception that Form H was used instead of Form D. If the case warranted a recommendation for a pension, Form I was used.

The system of Pay and Accounts as described has proved practical and efficient, and generally easy of comprehension to those with little or no experience of accounts.

In the early days of the Corps the difficulties that arose were the inevitable ones when forming a new and rapidly growing administration, necessarily understaffed, and lacking personnel experienced in accounts of any description. The Command Pay Office were also too understaffed to be able to observe on errors in the accounts generally

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until some months after these were sent in, by which time repeated moves and casualties to the personnel concerned had taken place. With the assistance of the Arrears Department of the Command Pay Staff this state of affairs did not last long, however, the Corps Accounts being established on a sound and smooth basis. All outstanding differences in the earlier Companies were cleared up, and from then onwards there were practically no observations beyond the usual small ones on Pay Sheets. Of the accounts of the latter formed Companies the C.P. in E. observed promptly, thus enabling the errors to be adjusted and Corps Accounts maintained generally correct and up to date.

INDEX CARD

Refer. ..... Company ..... Reg. No.....

Name.....

Village .....

Markaz .....

Died at..... Date.....

Cause of death.....

A.P. & S.D., Alex./5721/1486/11/13 : 18/5M-A.M.

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To THE MUDIR of C/Deaths/

.....

I regret to inform you of the death of.....

Village..... Markaz.....

Recruited at..... On..... Recruiting number....

Place of death..... Cause of death.....

Date of death..... Identity disc number.....

who died while serving with the Camel Transport Corps.

Any amount found on body or left by deceased, together with arrears of pay due, if any, at date of death, will be intimated to the Ministry of Finance.

Will you please notify the next of kin of deceased, and obtain particulars of any dependents, asked for below, as soon as possible.

.....Colonel,
Inspector, Camel Transport Corps.

G.H.Q., 2nd Echelon,
Cairo.

PARTICULARS AS TO DEPENDENTS

The following instructions should be carefully complied with.

1. It is only necessary to include such persons as were either entirely or partially dependent on deceased for their support. A complete list of relatives is *not* required.

2. If any of the following relatives are given as dependents of the deceased, it will be necessary to certify *in the remarks column* in the case of a—

(*a*) Wife—That she has or has not re-married.

(*b*) Son—That he is unable to support himself.

(*c*) Daughter—That she is unmarried and unable to support herself.

(*d*) Brother—That (1) he is unable to support himself, (2) his father is dead or, if alive, is unable to support him, (3) he was dependent on deceased for his support.

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(*e*) Sister—That (1) she is unmarried and unable to support herself, (2) her father is dead or, if alive, is unable to support her, (3) she was dependent on deceased for her support.

(*f*) Mother—That she has no husband alive.

(*g*) Father—That he is unable to support himself.

If the dependents include any of those relatives mentioned in (*d*), (*e*), (*f*), (*g*) above, it will be necessary to state how many adult brothers of the deceased are alive, if any.

8. In cases of dependents who were only partially but not entirely supported by the deceased, the nature and the extent of dependency must be described in the remarks column against each name.

Name of Dependents, if any. See (1) above. (Write name of each on a separate line.)	Age.	Relation to deceased.	Whether entirely or partially supported by deceased.	Remarks. See (2) and (3) above.
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....

Signature of Omda or Sheikh el Hara .....

Signature of Mamour .....

.....Date.

.....Date.

To be returned to Inspector, C.T.C.,
G.H.Q., 2nd Echelon,
Cairo.

A.P. & S.D., Alex./$\frac{5674}{1487/12.}$/11-18/2500. W.M. & Co.

Note.—The reverse of this form is used for a translation of the above in Arabic.

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"A." C/Deaths/

Recommended that a gratuity be granted to the dependents of the undermentioned man, who died while serving with the C.T.C.:

Coy. and No..... Name.....

Village..... Markaz.....

Date of death..... Cause of death.....

Place of death..... Daily rate of pay, Pt.....

The following documents are forwarded herewith in support of recommendation:

1. .....

2. .....

3. .....

"T."

.....191

.....Colonel,
for D.S.T., E.E.F.

A.P. & S.D., Alex./5477/1487/9/11 : 18/3M. (V. & G.).

F.A.

It is proposed to approve the grant of a gratuity equal to .....months' pay at.....piastres per diem.

Do you agree?

"A." .....Major,
/ /191 D.A.A.G.

"A."

I agree.

F.A.

C.P. in E.

Gratuity equal to.....months' pay at.....piastres per diem approved as a final award.

"A." .....Major,
/ /191 for D.A.G.

C.T.C.

Necessary action taken.

Cairo. .....Captain,
/ /191 for C.P. in E.

Digitized by Google

C.R., No. B/..... d/d..... C/Deaths/

GRATUITY

To.....

.....

Reg. No.....

Attached please find cheque No..... value Pt..... as gratuity to the.....

.....

of the above mentioned (who died whilst in the service of the Camel Transport Corps) being equal to.....months' pay at.....Pt. per diem.

Will you kindly effect payment and obtain payee's signature to the following official receipt, and also the signatures of two responsible persons as witnesses to the payment?

The address of the deceased was as follows:

Belad .....

Markaz.....

Will you kindly return payee's receipt when the necessary formalities have been carried out?

C.T.C. Compensation Dept., G.H.Q., 2nd Echelon.

.....Major, for Inspector C.T.C.

.....191

RECEIPT

Received the above-named sum in full settlement in respect of the services specified above.

1st Witness ....

2nd Witness..... Signature or Seal of Payee.

Translation of the above in ARABIC.

A.P. & S.D., Alex./5847/1486/14/12 : 18/2M-A.M.

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A.P. & S.D., Alex./$\frac{3749}{414A}$/5 : 18/2M-B.B.

Reference Files
C/Deaths/P/
B/
53/3404/

DEATHS: CAMEL TRANSPORT CORPS DEPENDENT'S PENSION

Details in the case of No.....

.....who died while serving with the above Corps.

Belad..... Markaz .....

Cause of death..... Date of death.....

Dependents.

Awarded gratuity of.....months' pay at.....piastres per diem under files quoted above.

.....Major,
O.C., No. 1 Depot,
Camel Transport Corps.

Kantara West.
1918.

"A".....

"T," 1st Echelon,
G.H.Q.

.....Colonel,
for D.S.T., E.E.F.

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A.F.W. 3428
(Egypt).

REPORT ON ACCIDENTAL OR SELF-INFLICTED INJURIES

To be rendered in accordance with instructions on the back of this form.

Date of Casualty.....

1. Number, Rank, Name, and Unit of injured man. .....

2. Nature, location, and severity of injury. (N.B.—Field Ambulance to be notified at once if wound is believed to be self-inflicted.) .....

3. Short statement of the circumstances of the case. (Signed statements of witnesses to be attached to this form.) .....

4. Commanding Officer's opinion as to whether the man was :
   (*a*) In the performance of military duty. .....
   (*b*) To blame. .....
   (*c*) Whether any other person was to blame. .....

.....
Date..... Commanding.

5. (*a*) Opinion of G.O.C., Brigade. .....
   (*b*) Disciplinary action taken or proposed, whether against injured man or another. .....

.....
Date..... Commanding.....Brigade.

6. Headquarters.
.....
Forwarded.

.....
Date..... Commanding.

7. To D.A.G.,
1st Echelon, G.H.Q., E.E.F.
forwarded.

.....
Date..... Commanding.

8. To D.A.G.,
3rd Echelon, G.H.Q., E.E.F.
Forwarded for Record.
Date.....

.....D.A.G.,
1st Echelon, G.H.Q.

A.P. & S.D., Alex./$\frac{4589}{25A}$ 8 : 18/ 15M.-R.B.

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INSTRUCTIONS

1. These forms are to be completed in all cases of accidental or self-inflicted injuries involving a soldier's absence from duty, whether due to the man's own act, or that of a comrade or to other extraneous circumstances.

2. Where several casualties occur as the result of one accident, one form is to be completed for each Officer or other rank injured, but only one set of statements from the witnesses of the accident need be attached.

3. Full statements are to be taken by an Officer from the witnesses of the accident. These statements will be signed by the witnesses making them, and by the Officer who takes them, and will be forwarded with this form. Where it is intended to take disciplinary action, copies of these statements should be retained by the Unit for use in lieu of a summary of evidence.

4. Where it is possible to obtain it, a statement from the injured man will also be forwarded. This, however, should not be used as evidence against him in subsequent disciplinary proceedings.

SPECIAL INSTRUCTIONS AS TO EVIDENCE IN CASES OF SELF-INFLICTED WOUNDS

5. In these cases the statements mentioned in paragraphs 2 and 3 above should bring out all material points, e.g. statements to the effect that the witness was with the accused standing on the fire-step (or sitting in a dug-out); muzzle of rifle on toe of foot; hand on muzzle; that accused pulled trigger; that the rifle was afterwards examined and an empty cartridge case was found in chamber; that accused was seen to be wounded; what accused said ("I have shot myself"; "I did not know it was loaded," etc.).

6. A soldier is specially trained in the safe use of his rifle and revolver, and evidence of any neglect of the ordinary precautions as to their handling in such cases usually has considerable bearing on the question of negligence. In the case of wilful self-wounding, the fullest possible evidence should be obtained; unless the evidence is conclusive, this charge should not be used. The charge will, therefore, usually be laid under Sect. 40 Army..... "Conduct to the prejudice of good order and military discipline in wounding himself through negligently handling a rifle," and an alternative charge to this effect should be made, even if the accused is to be tried under Sect. 18 for Wilful Maiming.

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"A."

C/Injuries/ /

Recommended that a gratuity of.....months' pay at .....piastres per diem be granted to No..... .....of.....village..... Markaz, as compensation for..... .....while serving with .....Company, Camel Transport Corps.

The under-mentioned documents supporting recommendation forwarded herewith:

1. .....
2. .....
3. .....

.....Colonel,
for D.S.T., E.E.F.

C.T.C.
/ /191

A.P. & S.D., Alex./3061/414A/3 : 18/500. (V. & G.).

Injuries Claim No. C.

Details of Pay, etc., required to support claim for Compensation in the case of.....

No.....

.....Company, Camel Transport Corps.

Date of discharge.....191..

Daily rate of pay .....Pt.

Date to which paid .....191..

Whether paid for period in Hospital.....

Kantara West.
191..

.....Major,
O.C., No. 1 Depot, C.T.C.

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C.R., No. B/

d/d..... C/Injuries/ /

COMPENSATION CLAIM

To.....

.....

Ref. No.....

Attached please find cheque No.....value Pt....., as gratuity to the above mentioned, for injuries received whilst doing duty with the Camel Transport Corps, being equal to.....months' pay at Pt.....per diem.

Will you kindly effect payment to the above-mentioned person, and obtain payee's signature on the following official receipt, and also the signatures of two responsible persons as witnesses to the payment?

The address of the payee is as follows:

Belad.....

Markaz .....

Will you kindly return payee's receipt when the necessary formalities have been carried out?

.....Major,
for Inspector, C.T.C.

C.T.C. Compensation Dept.,
G.H.Q., 2nd Echelon,
.....191

RECEIPT

RECEIVED the above-named sum in full settlement in respect of the services specified above.

1st Witness ....

2nd Witness ..... Signature or Seal of Payee.

Translation of the above in ARABIC.

A.P. & S.D., Alex./5847/1486/14/12 : 18/2M-A.M.

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Reference Files.
.....
C/Injuries/ /P/
D/
53/3404/

CAMEL TRANSPORT CORPS

RECOMMENDATION FOR PENSION—PERMANENT INJURIES

Details in the case of No.....

.....who received the under-mentioned injuries while serving with the above Corps. Belad.....

..... Markaz .....

Nature of injury.....

.....

Awarded gratuity of.....months' pay at.....piastres per day under files quoted above.

.....Major,
O.C., No. 1 Depot,
Camel Transport Corps.

Kantara West.
1918.

"A."

Recommended that the above-named man be considered for the grant of an Egyptian Government pension.

.....Colonel,
for D.S.T., E.E.F.

"T," 1st Echelon.
1918.

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SCALE OF COMPENSATION TO DEPENDENTS OF NATIVES WHO ARE KILLED OR DIE WHILST EMPLOYED WITH THE E.E.F.

Dependents.	Amount.
Widow	1 year's pay.
Orphan children, too young to support themselves	1 year's pay.
Father: (1) If unable to work . . .	6 months' pay.
(2) If able to work . . .	Nil.
Mother: If a widow	6 months' pay.
Brothers and Sisters, too young to support themselves: (1) If Father dead . .	6 months' pay.
(2) If Father alive . .	Nil.
Other Dependents with substantial claim to consideration	3 months' pay.
Exceptional cases not provided for above .	On their merits.

COMPENSATION CASES (INJURIES)

Total (1 year's pay) .	Death or loss of two limbs or both eyes.
Half . . .	Loss of one limb or one eye if sight of other one is impaired.
Third . . .	Loss of one eye if sight of the other is not impaired.
	Less serious injuries involving interference with and functions of a limb or part of body.
One-fourth to one-sixth	Loss of finger, stiffness of joints, etc., according to degree.

10/2/1919.

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A.P. & S.D., Alex./$\frac{3075}{414A}$/3 : 18/30 Bks. W.M. & Co.

CAMEL TRANSPORT CORPS

Last Pay Certificate No.....

I certify that on the.....day of.....* 191 the sums as stated opposite their names were due to the undermentioned.....men :

.....

/ /1918. O.C.....Coy., C.T.C.

No.	Rank.	Name.	Belad.	Markas.	Rate.	Amount due.	†	†
.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....

Totals .....

* I.e. the day they leave the Company. † For use by No. 1 Depot ONLY.

CAMEL TRANSPORT CORPS

Last Pay Certificate. No.....

I certify that on the.....day of.....* 1918, the sums as stated opposite their names were due to the undermentioned men :

No.	Rank and Name.	Amount.	Rate of Pay. Pt.
.....	.....	.....	.....
.....	.....	.....	.....

* I.e. the day they leave the Company.

.....Captain,

/ /1918. O.C.,.....Coy., C.T.C.

A. P. & S.D., Alex./3730/414A/5 : 18/500 Bks. (V. & G.).

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O.C.,.....Company,
Camel Transport Corps.

Kindly forward to No. 1 Depot Last Pay Certificates of the following men sent there for discharge as unfit:

No.	Name.	Village.	Marks.	Remarks.
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....

.....
for O.C., No. 1 Depot,
Camel Transport Corps.

Kantara.
/ /1918.

A.P. & S.D., Alex./3733/414A/5 : 18/500 Bks. (V. & G.).

Army Form N. 1487.

REQUISITION FOR CASH

(Not to be rendered in duplicate.)

.....Regiment or Corps.
Station .....
Date .....191....
CASH required for the period ending .....191....

Company etc.	Company, etc., Officer [Name, Initials, and Rank.]	Station.	Dates on which money is required.	Issue to be made by separate cheque to each Company, etc., Officer. £	Issue to be made by one cheque to the Adjutant or Quartermaster. £	Issue to be made in cash† £
.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....
			TOTAL			

£ s. d.

†Cash required: Notes { £1 / 10s. }
Silver in £5 bags

The account will be rendered to the Paymaster *.....

The Cashier..... .....{ Adjutant, Quartermaster, or Officer Commanding Company, &c.

....

* To be filled in by the Officer making the demand.

D.D. & L., London, E.C.
P13966-P481] Wt. W2214/P258 150,000 7/19 W 39; Forms N1487/24

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Army Form O.1603A.

FIELD SERVICE: PAY LIST OF CIVILIAN SUBORDINATES.

Employed in..... at..... from..... to.....

Nature of Appointment or Employment.	Name (Surname first).	Period of Charge.		No. of days.	Rate.	Amount.		RECEIPTS (Required only when payments are not made in the presence of two witnesses). Stamped receipts when necessary.	REMARKS. Explanatory of any Casualty which may have occurred during the period of this Pay List.
		From	To			Francs.	Centimes.		
1	2	3	4	5	6	7	8	9	10
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
				Total.....					

(34) W1317/P1006 160m 5/18v 71 G. & S. 108a. Forms O.1603A/1.

P.T.O.

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Nature of Appointment or Employment.	Name (Surname first).	Period of Charge.		No. of days.	Rate.	Amount.		RECEIPTS. (Required only when payments are not made in the presence of two witnesses.) Stamped receipts when necessary.	REMARKS. Explanatory of any Casualty which may have occurred during the period of this Pay List.
		From	To			Francs.	Centimes.		
1	2	3	4	5	6	7	8	9	10
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
				Total.....					

CERTIFICATES

Certified, that the persons named in this Pay List have been employed during the periods stated against their respective names, and that the rates not under Contract are fair and reasonable, and not in excess of those paid in the District for similar services.

.....Officer under whom the Subordinates are serving.

Date.....191

WAGES NOT PAID ON THE CHECK BOOK

Certified that the amount shown against the name of each of the persons named on reverse, totalling to .....francs, has been paid in our presence to the man himself, or to the person authorised by him in writing to receive it.

(1st Signature) .....

(2nd Signature) .....

Date.....191

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Army Form N.1513.

No.....

ACQUITTANCE ROLL (ALL ARMS)

..... (Squadron) (Battery) (Company) of the .....

Regl. No.	Rank and Name.	* Adapt if necessary.	Cash Payment. *Francs.	Cash Payment. Centimes.	Sterling equivalent (to be completed in Fixed-Centre Pay Office). s.	Sterling equivalent (to be completed in Fixed-Centre Pay Office). d.	Original. Receipt of Soldier.
.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....
		Total .					The under-mentioned (1) and (2) to be completed by Paymaster i/c Clearing House.

s. *d.*

To be inserted by Paying Officer. Total, in words:

(1) Rate of exchange: 5 =

(2) Total sterling equivalent, in words:

Francs ....Pounds.

Centimes ....Shgs., and.....Pence.

Signature of the Officer making the payments.....

Officer Commanding.....Company,

.....Regiment.

Date of payment.....19..

Certified that the above amounts have been charged in the ledger accounts of the men concerned.

Date.....19 .....Paymaster .....

Wt.5598-M2554. 150,000.Book 6 (Refill).8/17. B. and N.Ltd.

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Serial No.....(.....)

CAMEL TRANSPORT CORPS AND DONKEY TRANSPORT CORPS

ARREARS PAYABLE IN EGYPT

List No..... (.....) .....(.....)

No..... Name.....

(.....)..... (.....) .....

Died on..... Markaz or Town.....

(.....)..... (.....) .....

Village or Kism..... Province or Governorate.....

(.....)..... (.....) .....

Remarks .....

(.....).....

	£E.	M.	(.....)	(....)	
Money found on body					(.....).
Pay due at death .					(.....).
Total amount due .					(.....).

Signature or seal of next of kin.....

(.....).....

Form No.....C.T.C.

Note.—The above spaces bracketed are used for ARABIC translation.

A.P. & S.D., Alex./ 3619/5 : 18/5M. W.M. & Co.
414.

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CAMEL TRANSPORT CORPS

Pay Sheet for period ending..... .....{Company. / Section.

CASH PAYMENTS

No.	Rank and Name.	Rate of pay. Pt.	Period.	Amount due. Pt.	Br't for'd from last month. Pt.	Total due. Pt.	By Recruiting Officer. Date of enlist-ment. *	Amount. Pt. *	No. of A.R. *	By Company Officer. Date.	Amount Pt.	Total cash payment	Balance carried forward.	REMARKS. All casualties to be explained here.

* Only to be filled in in the case of first entry in pay sheets of newly enlisted Recruits.

A.P. & S.D. Alex./$\frac{2614}{414}$/1 : 18/300 Bks. -R.B.

CAMEL TRANSPORT CORPS
BALANCE OF PAY DUE TO DECEASED EGYPTIANS

Serial No. List No. 100.

Serial No.	A. Company.	Name.	.....Belad.	Markaz.	Pay due.	Estate.
1234	6666	Abdel Karim Mohamed	24/1/19. Karnak	Luxor	Pt. 1,020	35·5

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(26106) Wt.W12165-2146. 15,000 Bks. 2/15.M.R.Co.Ld.

Army Form N.1531A.
(To be made out in duplicate.)

FOR USE IN THE FIELD

ACCOUNT of sums received and expended by the Sub-Accountant during the month of.....191...,
in account with the Paymaster..... Paymaster's Ledger Folio.....

Dr. *Cr.*

Date.	No. of Voucher.	From whom received.	Particulars.	Amount. £ s. d.	Date.	No. of Voucher.	To whom paid.	Particulars.	Amount. £ s. d.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
			Total Receipts .	.....				Total Expenditure .	.....
			Balance due to Paymaster on last Account ..					Balance due by Paymaster on last Account ..	
			Balance due by Paymaster on this Account ..					Balance due to Paymaster on this Account ..	
			TOTAL *Dr.*	.....				TOTAL *Cr.*	.....

I certify that the above Account is correct.

Station and Date..... .....Sub-Accountant.

1. This Account is to be made out by the Sub-Accountant (the vouchers supporting the several credits and charges being annexed and numbered as "Sub-Vouchers") and should be forwarded, as soon after end of month as possible, to the A.G., at the Base, who will transmit it to the Paymaster concerned at the earliest opportunity.

2. When this Form is used by the General Staff in connection with intelligence duties, the Sub-Accountant shall attach a Certificate in those cases where it is not possible or expedient to obtain Vouchers.

3. Vouchers or certificates should be numbered 1, 2, 3, etc.

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NATIVE PERSONNEL FORM No. 5A. Sheet No. A/.....

STATEMENT OF OUTSTANDING DEBIT CASH BALANCES TO BE RECOVERED FROM THE EGYPTIAN GOVERNMENT

SERVICE OR CORPS..... .....Unit or Depot.

Week ending Saturday.....191....

1. Numbers.			2. Rank and Name.	3. Enlistment.		4. Casualty.			5. Due from Native at Date of Casualty.		6. No. of Pay Sheet.	7. Remarks.
Serial.	Recruiting.	Regimental.		Date.	Place.	Date.	Place.	Nature.	£E.	M/m.		

Certified correct.....Officer Commanding,

.....Unit or Depot.

Date.....191....

A.P.&S.D., Alex./$\frac{3968}{25A}$/6 : 18/5M. W.M. & Co.

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NATIVE PERSONNEL FORM No. 5C. Sheet No. C/.....

STATEMENT OF DEBIT CASH BALANCES (PREVIOUSLY CHARGED ON N.P. FORM 5A), NOW TO BE REFUNDED TO THE EGYPTIAN GOVERNMENT OWING TO RECAPTURE OF DESERTERS OR FOR OTHER REASONS

SERVICE OR CORPS..... .....Unit or Depot.

Month ending.....191....

1. Numbers.			2.	3.	4. Casualty.		Previous charge against Egyptian Government.			7. Date man joined Unit (or other explanation of refund).	8.	9.
Serial.	Recruiting.	Regiment.	Rank and Name.	Date of Enlistment.	Date.	Nature.	5. Serial No. on Form N.P.5A.	6. Amount. £E.	M/m.		Ref. No. of Pay Sheet.	Remarks.

Certified correct.....Officer Commanding,

.....Unit or Depot.

Date.....191....

A.P. & S.D., Alex./$\frac{1914}{25/T}$/16/11 : 17/1500. W.M. & Co.

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NATIVE PERSONNEL FORM No. 5B. Sheet No. B/.....

STATEMENT OF OUTSTANDING CREDIT CASH BALANCES DUE TO DESERTERS.

SERVICE OR CORPS..... .....Unit or Corps.

Month ending.....191....

1. Regimental Number.	2. Rank and Name.	3. Date of Enlistment.	4. Casualty.		5. Amount due to Native at date of Casualty.		6. Reference Number of Pay Sheet.	7. Remarks.
			Date.	Nature.	£E.	M/m.		

Certified correct.....Officer Commanding,

.....Unit or Corps.

Date.....191....

A.P. & S.D., Alex./$\frac{1913}{25/T}$/16/11 : 17/1500. W.M. & Co.

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CAMEL TRANSPORT CORPS

Pay Sheet for period ending..... .....{Company. / Section.

No.	Rank and Name.	Rate of Pay. Pt.	Period.	Amount due. Pt.	Br't for'd from last month. Pt.	Total due. Pt.	Cash Payments. By Recruiting Officer. Date of enlistment.	Amount. Pt.	No. of A.B.	By Coy. Officer. Date.	Amount. Pt.	Total cash payment.	Balance carried forward.	REMARKS. All casualties to be explained here.
							*	*	*					

* Only to be filled in in the case of first entry in Pay Sheets of newly enlisted Recruits.

A.P. & S.D., Alex./$\frac{3635}{414}$/5 : 18/500 Bks.–B.B.

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SUMMARY

	CASH PAYMENT DURING MONTH.			Total Cash Payments. £E.	Allotment of Pay.	Total.	
	First Payment. Date.....	Second Payment. Date.....	Third Payment. Date.....				
From Folio 1.....							Certified that the amounts shown against the names of the persons in the preceding Pay Sheets have been paid in our presence.
„ 2.....							
„ 3.....							1st Witness .....
„ 4.....							2nd Witness.....
„ 5.....							
„ 6.....							1st Payt.....
„ 7.....							2nd Payt. .....
„ 8.....							3rd Payt. .....
„ 9.....							
„ 10.....							
„ 11.....							
„ 12.....							
„ 13.....							
„ 14.....							
„ 15.....							

Conversion £..../..../.... £..../..../.... £..../..../.....

Certified that the persons named in these Pay Sheets have been employed during the periods for which pay has been charged.

.....Officer under whom the men are serving.

N.B.—To be made out in Triplicate, two copies being forwarded to Pay Office and one copy retained.

A.P. & S.D., Alex./ $\frac{3616}{414}$/5 : 18/200 Bks.-R.B.

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Registered. No.....

CAMEL TRANSPORT CORPS.

O.C., ...Company,
Camel Transport Corps.

Herewith the following Acquittance Rolls; duplicates will be forwarded on receipt of acknowledgment of Originals.

R.O.'s No.	No. 1 Dpt. No.	R.O.'s. No.	No. 1 Dpt. No.	R.O.'s No.	No. 1 Dpt. No.	Remarks.

Kindly acknowledge receipt.

Kantara. .....for O.C., No. 1 Depot,
/ /1917. Camel Transport Corps.

No.....

CAMEL TRANSPORT CORPS.

O.C., ...Company,
Camel Transport Corps.

Herewith (.....) recruits numbered as follows:

From	To	Remarks.

Nominal roll enclosed.

Kantara. .....for C.O. No. 1 Depot,
/ /19 Camel Transport Corps.

A.P. & S.D., Alex./No.4600/414/8.18/50 Bks.-A.M.

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No..... A.F.N. (Native) 1513.

ACQUITTANCE ROLL (EGYPTIAN PERSONNEL).

Corps or Unit..... Grade.....

Gang No..... Rate of Pay .....

Indent No..... Place of Enlistment.....

Date of Enlistment..... Period of Service .....

Imprest Account No.....

Regimental Number.	Rank and Name. (All three names to be given.)	Cash Payment. £E.	Cash Payment. M/m.	Receipt of Payee.

The undermentioned (1) and (2) to be completed by Paymaster i/c Clearing House:

£*E.* *s.* *d.*

(1) Rate of Exchange =

(2) Total Sterling, equivalent in words:

To be inserted by Paying Officer, Total, in words:

..... Pounds.

Pounds Egyptian .....

..... Shgs., and

Milliemes.....

.....Pence.

Signature of the Officer making the Payments.....

Officer Commanding....Coy.

Date of Payment.....19.. .....Regiment.

Certified that the above amounts have been charged in the ledger accounts of the men concerned.

Date.....19.. .....Paymaster.....

A.P. & S.D., Alex./ 3106 3 : 18/1200 Pads.–B.B.
50025A/2.

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NOMINAL ROLL of.....recruited at.....on.....
for the CAMEL TRANSPORT CORPS..... Length of Service.....months.....Rate of Pay Pt.....per diem.

Regtl. No.	Recruiting No.	Name.	Village.	Markaz.	Date of Disposal.					Date of Re-engagement.	Remarks.	Signature of Recruit.
					Time expired.	M.U.	Deserted.	Died.				
1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.

RECRUITING OFFICER'S CERTIFICATE

Each recruit has received:

.....

£E.....advance.....

.....

.....

R.O.

Date .....

M.O.'S REPORT

Certified that the above men have been:

Found fit and vaccinated

.....

M.O. / /18.

1st inoculation .....

M.O. / /18.

2nd do.....

M.O. / /18.

.....

M.O.

Date .....

EQUIPMENT CERTIFICATE

Each recruit has received:

.....

C.C. Rec. Camp.

Date .....

In addition to above each recruit has received:

.....

Q.M.

Date .....

Date received at No. 1 Depot, C.T.C.

.....

Date despatched to Unit....

.....

.....

.....

Note.—Columns 6 to 11 are for use of No. 1 Depot, C.T.C., only.

A.P. & S.D., Alex./$\frac{5076}{43/4}$/9 : 18/2M. W.M. & Co.

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CONTRACT

1. I understand that I am required to serve in the..... .....from.....for a period of 6 months.

2. I understand that I am subject to all Military Laws and Regulations now in force, or which may come into force during my period of service, and that I may be tried by Court Martial or Military Court for any breach of the said laws or regulations.

3. I am to receive pay at.....piastres per day, with clothes and food, as provided for the Corps, and to be returned to the Recruiting Centre on discharge, at the expense of the Military Authorities.

4. It is understood that the Army has the right to discharge me at any time it may deem fit before the said period has expired.

5. My seal or thumb-print on the inside of this form is in token of my understanding the above conditions.

This half is used for a translation of this Contract in ARABIC.

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Sheet No.....

CAMEL TRANSPORT CORPS: ANALYSIS OF ACQUITTANCE ROLLS RECEIVED FROM THE INSPECTOR OF RECRUITING

Recruiting Numbers.		R.O.'s A.R. Numbers.	Date of A.R.	No. 1 Depot A.R. No.	No. of Men.	Advances.		Total.		Total	Coy. or Depot.	Casualties.	
From	To					£E.	Pt.	£E.	Pt.	Men.		No.	Recruiting Numbers.
T 8936	8960	FCW 1479	13/10/18	A. 5837	24	72	—	—	—	—	—	1	T 8957
X 3983	4000	AHE 366	9/10/18	8	16	48	—	—	—	—	—	2	X 3988–3991
T 8841	8851	FCW 1472	12/10/18	9	11	33	—	—	—	—	—	—	
X 4167	4191	AHE 379	15/10/18	5840	25	75	—	—	—	—	—		
4080	4104	374	11/10/18	1	25	75	—	303	—	101	"A"	—	
Casualties					3	9	—	9	—	3	No. 1		
Totals					104	312	—	312	—	104	Dep.		

.....Major,
O.C., No. 1 Depot, C.T.C.

Kantara West.
/ / .

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CHAPTER VIII.—STATISTICS

ALLOTMENT OF CAMELS AND DONKEYS TO CORPS DURING 1917 OPERATIONS

Formation.	Division or Unit.	Company.	Duty.		Total Camels with Corps.	Donkeys.	
			1st Line.	Convoy.		Company.	Number.
20th Corps . .	53rd Division	G	1,994				
	74th ,,	P	1,987				
	60th ,,	E	1,981				
	10th ,,	M	1,991				
		A		1,984			
		B		1,994		Nil	Nil
		C		1,994			
		Q		1,991			
		R		1,997			
	Corps Train			81			
	7th Mounted Brigade			800	18,794		
21st Corps . . .	52nd Division	D	1,966				
	54th ,,	F	1,974			Nil	Nil
	75th ,,	K	1,996				
	Corps Train			188	6,124		
Desert Corps . .		L		1,999			
		H		1,987		Nil	Nil
		N		1,991	5,977		
L. of C. Depots . .					—		—
W.F.F. . . .					4,539		1,996
				Totals . .	35,434		1,996

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—	—	—	—	—	—	—	—	—	—	1
									66,782	4,569

NSPORT CORPS

Riding Fit. Good condition.	Total.	Remarks.
110	10,928	
52	3,878	
60	2,272	
455	876	
—	143	
668	18,097	

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ALLOTMENT OF CAMELS AND DONKEYS TO CORPS DURING 1918 OPERATIONS

Formation.	Division or Unit.	Company.	Duty.		Total Camels with Corps.	Donkeys.	
			1st Line.	Convoy.		Company.	Number.
20th Corps . .	53rd Division	N	1,166			No. 1 D.T.C.	1,993*
	10th ,,	U	1,160				
	60th ,,	V	1,162			No. 2 D.T.C.	1,941
		A		1,186			
	Corps Train			186			3,934
	235th Brigade		179		5,039		
21st Corps . . .	3rd Division	C (½)	616				
	7th ,,	C (½)	572				
	54th ,,	H	1,166				
	75th ,,	R	1,163				
		D		1,186		No. 3 D.T.C.	1,984
		E		1,186			
		F		1,186			
		G		1,186			
		K		1,186			
		L		1,200			
		P		1,186			
		T		1,187			
	Corps Train			186	13,206		
Desert Corps . .		B		1,187		No. 1 D.T.C.	300
		M		1,186			
		Abce		240	2,613		
L. of C. Depots . .					—	No. 4 D.T.C.	1,685*
W.F.F. . . .					4,814		35
				Totals . .	25,672		7,938

* Includes 300 attached from No. 4 D.T.C.

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CAMEL TRANSPORT CORPS, EGYPTIAN EXPEDITIONARY FORCE, 1915–1919

(A) Recapitulation of Baggage Camels taken on strength of Corps and Casualties. From Formation to December 31, 1918

Taken on Strength.				Casualties.					Remarks.
Period.	Fit.	To H.P. on receipt.	Total.	Killed.	Sold.	Died.	Hospital.	Total.	
Dec. 1, 1915, to Mar. 31, 1916	18,662	2,134	20,796	17	256	338	1,900	2,511	W.F.F. operations against Senussi.
April 1, 1916, to June 30, 1916	2,627	326	2,953	103	70	500	3,635	4,308	Beginning of advance from Kantara eastwards. Weeding out of poor camels, as others become available.
July 1, 1916, to Sept. 30, 1916	10,094	514	10,608	75	67	380	2,233	2,755	W.F.F. operations (southern sector), eastern operations Romani to Bei El Abd.
Oct. 1, 1916, to Dec. 31, 1916	15,542	203	15,745	20	29	596	1,526	2,171	Eastern operations Moghasa to El Arish. Large number of casualties due to mange. New pattern saddle now available from A.O.D. and issued to Corps.
Jan. 1, 1917, to Mar. 31, 1917	6,146	320	6,466	114	29	1,002	2,132	3,277	Maghbaba, Rafa operations and advance from El Arish to Gaza. Nekhl operations. Heavy casualties in Somalis due to epidemic of diarrhœa while sectionalising. Casualties also due to cold and rain. No camel rug as yet issued.
April 1, 1917, to June 30, 1917	3,605	231	3,836	288	23	794	1,555	2,660	Second attack on Gaza. Heat wave in April caused many casualties. Large numbers of Somalis to H.P. suffering from a kind of arthritis (May to October 1917).
July 1, 1917, to Sept. 30, 1917	227	53	280	44	—	343	1,367	1,754	Operations at a standstill.

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Oct. 1, 1917, to Dec. 31, 1917	3,918	447	4,365	477	—	901	1,401	2,779	Capture of Beersheba, Shiria, Hareira, and Gaza. Pursuit to Jaffa and hills. Capture of Jerusalem.
Jan. 1, 1918, to Mar. 31, 1918	2,332	129	2,461	338	2	3,010	3,145	6,495	(1) Operations in hills north and east of Jerusalem on mobile rations. Cold and wet caused casualties. (2) Convoy companies in plains suffered casualties through wet and mud and over-work while on short rations.
April 1, 1918, to June 30, 1918	1,600	133	1,733	262	—	865	1,983	3,110	Weeding out after winter work. Reconstruction of companies. Surra.
July 1, 1918, to Sept. 30, 1918	1,585	50	1,635	141	—	348	1,852	2,341	Shortage of water in hills caused horses and mules to be withdrawn, with consequent extra work for camels. Large convoys from Wadi Surar to Latron.
Oct. 1, 1918, to Dec. 31, 1918	444	29	473	153	—	532	1,508	2,193	Final operations. Advance to Damascus, Bayruth, and Tripoli North and Amman East. Heavy rains at Tripoli and Bayruth.
Totals .	66,782	4,569	71,351	2,032	476	9,609	24,237	36,354	

(B) Classification of Camels remaining on strength of Camel Transport Corps after disposal of those shown on Table A

Class of Camel.	Fit.	Under Treatment.	Sick.	Riding.	Total.	Remarks.
Heavy Burden Male .	1,650	72	45	40	1,807	
Light Burden Male . .	3,271	260	45	68	3,644	
Totals . . .	4,921	332	90	108	5,451	

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CAMEL TRANSPORT CORPS, EGYPTIAN EXPEDITIONARY FORCE, 1915–1919

RECEIPTS FROM REMOUNTS.

Period.	Egyptian.				Maghrabi.		Sudani.				Somali.				Indian.				Algerian.				Classification.	
	Heavy.		Light.				Heavy.		Light.		Heavy.		Light.		Heavy.		Light.		Heavy.		Light.		Fit.	Unfit.
	Effective.	Ineffective.	Effective.	Ineffective.	Effective.	Ineffective.	Effective.	Ineffective.	Effective.	Ineffective.	Effective.	Ineffective.	Effective.	Ineffective.	Effective.	Ineffective.	Effective.	Ineffective.	Effective.	Ineffective.	Effective.	Ineffective.		
1915, December .	895	404	—	—	857	97	146	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1,898	501
1916, Qr. yearly, January to March. Total	13,805	930	—	—	2,084	503	1,875	200	—	—	—	—	—	—	—	—	—	—	—	—	—	—	16,764	1,633
1916, Qr. yearly, April to June. Total .	853	—	—	—	—	—	1,774	326	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2,637	326
1916, Qr. yearly, July to September. Total	7,611	419	—	—	523	55	—	—	—	—	—	—	1,960	40	—	—	—	—	—	—	—	—	10,094	514
1916, Qr. yearly, October to December. Total	9,090	171	1,031	7	2,000	15	—	—	—	—	—	—	3,371	10	—	—	—	—	—	—	—	—	15,542	203
1917, Qr. yearly, January to March. Total	3,700	285	1,046	35	—	—	—	—	—	—	—	—	—	—	—	—	—	—	950	—	450	—	6,146	320
1917, April to May 20. Total . . .	1,805	157	326	27	—	—	—	—	—	—	—	—	—	—	—	—	—	—	497	—	1,177	47	3,605	231

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)RPS,
DURI

	Remarks.
Coastal tween Where h cky and	d. Native saddlery caused many sore ated to H.P. Personnel new to camel
Flat, ha Belts o avy san	ntered in Baharin Oasis caused several ity.
l.	
ulating,	Equipment now improving and camels
ulating, cts of n	gs yet issued. Mange caused a certain
. In ny.	Pon sand, in fairly good weather.
lating, l ar coast	for camel transport.
	d in excellent condition and with good at Beersheba caused difficulties in
s : blac ny, steel	Casualties due to (1) long period of working hard; (2) wet and cold in 3) difficulty in obtaining saddle repair
Only inder, s ily beco	mels worn out by winter, on mobile last lengthy spell of bad weather.
n over J trate, o m Jeric untain t	oncentrations. Companies marching n congested roads and met storm of wind lasting seven days. All camps and loads sodden and double in ailed badly.
Jericho cks. On	Many animals started this operation winter work.
on plain and east	(a) activity caused by long marches rations; (b) sore backs caused by ity of attending to saddlery.

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PART II

CHAPTER IX

GENERAL ORGANISATION AND ADMINISTRATION OF MECHANICAL TRANSPORT IN THE E.E.F.

Organisation and Administration of Mechanical Transport

1. The Mechanical Transport of the E.E.F., which included all R.A.S.C. units and vehicles and personnel attached to other branches of the Service, was administered by the Supply and Transport Directorate at G.H.Q.

2. The Staff dealing with M.T. under the D.S.T. consisted of an A.D.T. (who also dealt with all the other forms of Transport—horse, camel, and donkey —and R.A.S.C. officer and other ranks personnel questions), a D.A.D.T., and a D.A.D.T. (M.T.). This last appointment was created under War Office authority in March 1918, to deal with Technical Administration.

3. The D.A.D.T. (M.T.) acted as Technical Adviser, and was responsible for the efficiency of the workshop and the state of vehicles and for the provision and economy in the use of spares. He had an Inspection Staff, consisting of three officers who were experts in technical matters, and whose duties were to help him inspect the vehicles of units, to instruct the personnel in their upkeep, and to suggest improvements that could be made.

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This organisation did valuable work, considerably increasing the life of vehicles and reducing the number of spares which otherwise would have been used.

By centralising the whole of the inspection work through General Headquarters, it was possible to compare results obtained by the various units and to make known generally improvements that had been devised in individual workshops.

Further, the D.A.D.T. (M.T.) was able to give advice in the posting of officers, as his inspections made him intimately acquainted with the capacity and technical attainments of the M.T. officers.

4. Questions affecting personnel were dealt with by the A.D.T. The D.A.D.T., more especially dealt with states, returns, provision, and record of movement of vehicles and units.

5. The theatre of operations was divided up into districts in Egypt, and into lines of communication and Corps Areas in Palestine.

All M.T. units in Egypt, except the Base Workshop and Stores, were administered by the D.D.S.T., 2nd Echelon, Cairo, whose area included the whole of Egypt up to but excluding the Canal Zone. This area was split up into two Districts, Alexandria and Delta, for each of which a D.I.M.T. was appointed.

(i) The following units were permanently situated in Alexandria District:

1. Base M.T. Depot (500 Company).
2. Base M.T. Stores, which was originally part of the Base M.T. Depot.
3. Base M.T. Heavy Repair Workshop (644 Company).

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4. 303 M.T. Company, a Lorry Company employed on local transport.

5. No. 1 Motor Ambulance Company (1,078 Company).

(ii) Base M.T. Stores and Heavy Workshops were primarily for the purpose of dealing with units in the field, and came directly under G.H.Q.; but when 1st Echelon moved from Cairo and the 2nd Echelon took its place, a certain amount of dual control crept in. Questions of policy, priority of work, demands for machinery, etc., could only be dealt with by G.H.Q., 1st Echelon, and it was therefore decided to avoid this dual control by bringing these two units under the 1st Echelon.

(iii) In August 1918 the distribution according to War Establishments of Mechanical Transport personnel collectively employed at (*a*) Base M.T. Depot, Alexandria, (*b*) the Base M.T. Depot Stores, Alexandria, and (*c*) Advanced Base M.T. Depot, Ludd, was found to be unsuitable.

Originally in April 1915 (*a*) and (*b*) were sent out from England as one unit. Later, when the Heavy Repair Workshop arrived, it was placed in the same building as the Base M.T. Stores and the two units became more and more closely allied. The Base M.T. Depot after a time merely acted as a small local M.T. Depot, while the Advanced Base M.T. Depot, Ludd, was doing all the store work in Palestine, involving the holding of spares for the maintenance of over 5,000 vehicles. It also held all the reserve vehicles and had become the reception station for all M.T. personnel awaiting posting in Palestine. It was therefore decided to redistribute the personnel of these three formations

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STATEMENT SHOWING REDISTRIBUTION OF PERSONNEL OF BASE M.T. DEPOT, ALEXANDRIA, BASE M.T. STORES, AND ADVANCED BASE M.T. SUB-DEPOT, LUDD

Detail.	Allowed by War Establishment.			Total.	Proposed Redistribution.			Total.
	Base M.T. Depot, Alexandria, W.E. Pt. XI. No. 745.	Base M.T. Stores, Gabbari, Alex., W.O. cable 819604/6.7.18.	Advanced Base M.T. Sub-Depot, Ludd, W.E. Pt. XI. No. 699/118.		Base M.T. Depot, Alexandria.	Base M.T. Stores (644 Company).	Advanced Base M.T. Sub-Depot, Ludd.	
Officers :								
Majors	1	1	—	2	—	1	1	2
Captains	2	1	1	4	1	2	1	4
A/Adjutant (Captain)	1	—	—	1	—	1	—	1
Subalterns	3	3	1	7	1	4	3	8
Quartermaster	1	—	—	1	—	—	1	1
Total Officers	8	5	2	15	2	8	6	16
Warrant Officer	1	—	—	1	—	1	—	1
Company Sergeant-Major	1	—	1	2	1	—	1	2
Company Quartermaster-Sergeant	1	—	1	2	1	—	1	2
Sergeants	—	—	1	1	1	—	—	1
Artificers :								
Mechanist Staff-Sergeant	2	—	—	2	—	1	1	2
Fitters and Turners	12	—	4	16	4	—	12	16
Blacksmiths	4	—	1	5	1	—	4	5
Wheelers	4	—	1	5	1	—	4	5
Electricians	2	—	—	2	—	—	2	2
Storemen and Clerks :								
Warrant Officers	4	—	—	4	—	3	1	4
Staff-Sergeants	4	—	—	4	—	3	1	4
Sergeants	6	—	—	6	—	5	1	6
Corporals	14	—	1	15	1	11	3	15
Lance-Corporals	18	—	—	18	—	13	5	18
Privates.	134	—	6	140	6	89	45	140
Batmen	8	5	2	15	2	8	6	16
Cooks	1	—	1	2	1	—	1	2
Drivers	30	—	20	50	20	—	30	50
Total Other Ranks	246	5	39	290	39	134	118	291
Total Officers and Other Ranks	254	10	41	305	41	142	124	307

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(total establishment of which was 807), as shown, and authority for this reorganisation was obtained from the War Office on October 10, 1918.

(iv) *Proposed Move of Base Heavy Repair Shop (644 Company).*—Consequent to the advance made in 1917 and 1918, the lines of communication gradually lengthened, and as most of the Lorry Companies were operating in the advanced areas, the desirability of moving up the heavy workshops from Alexandria was considered.

Kantara was suggested; but it was obvious that if the fullest possible use were to be made of this workshop, it should be placed in a more forward position.

Jaffa and Ludd were the most likely sites, and it was finally decided to prepare a scheme for Ludd, which was nearer to the centre of activities and well served by good roads.

Plans were drawn and submitted, but the scheme as a whole fell through, owing to the scarcity and cost of building material.

One repair section for lorries was, however, moved forward in August 1918, and accommodation was provided in three large corrugated-iron buildings erected by the Royal Engineers.

A reduction of artificers' hours on lorry overhauls took place shortly after this section moved up.

The experience of having Heavy Repair Workshops partly at the Base at Alexandria and partly in the forward area near Ludd proved that, when military and economic considerations make it possible, a forward location is much the better of the two; not only because transport to and from a distant base is saved, but also because the artificers of the shops come into touch with the drivers using

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the vehicles, and work with a better understanding of what they are working for.

6. *Cairo District.*

The following units were stationed in the Cairo district: (*a*) Headquarters (790 Company); (*b*) Advanced Base M.T. Sub-Depot and Stores, with which was incorporated two E.M.R.U.s; (*c*) No. 2 Motor Ambulance Company (1,079 Company), R.A.S.C.

(*a*) This Company was originally used in the Western Desert Campaign, its vehicles being all Ford vans. Its Headquarters were withdrawn to Cairo, and all 2nd Echelon cars were attached to it.

(*b*) Advanced Base M.T. Depot and Stores dealt with all local work in Cairo.

7. The Palestine Line of Communication was divided into two areas: Canal Zone and Advanced Area (district east of Kantara).

M.T. in the former was administered by a D.I.M.T., and in the latter by a D.A.D.S.T., the whole being controlled by the A.D.S.T., P.L. of C.

The Canal Zone consisted of the whole length of the Suez Canal as far as Tel-el-Kebir, and included the towns of Port Said, Kantara, Ismailia, and Suez.

The Headquarters of this district were at Ismailia in 1917, but in 1918 they moved to Kantara.

The Headquarters of the following M.T. units were in this area:

(*a*) Motor-boat Company (see page 213).

(*b*) 493 M.T. Company—a lorry ammunition park used for local transport.

(*c*) Advanced Base M.T. Sub-Depot, with which was amalgamated two E.M.R.U.s, and latterly the workshop of 493 M.T. Company, the whole forming an intermediate workshop.

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8. *Deputy Inspector of Mechanical Transport.*

As previously stated, the senior M.T. officer holding the rank of Major was appointed D.I.M.T. in each district.

The D.I.M.T. was responsible to the O.C., R.A.S.C., of the District for the technical efficiency of all Mechanical Transport in his area and its maintenance on the road, which was attained by means of frequent inspections and inspection reports.

He also paid special attention to the economical use of stores and spare parts.

9. *M.T. Units in Areas other than Cairo, Alexandria, and P.L. of C.*

All other M.T. units in the E.E.F. were allotted either to G.H.Q. troops or to one of the three Corps (XXth, XXIst, and Desert Mounted Corps).

The M.T. attached to G.H.Q. troops was administered by the A.D.T. In each of the three Corps the D.S.T. was represented by an A.D.S.T., who dealt with M.T. through a senior M.T. Officer (S.M.T.O.), who held the rank of Major.

10. *S.M.T.O.*

The appointment of S.M.T.O. was included in War Establishments and a special staff was provided. This officer exercised supervision over such supply columns, ammunition parks, repair units, and other M.T. units as were allotted to his Corps, and detailed all Mechanical Transport, other than that attached to other services, for any work required by his Headquarters.

11. The channels of communication between the D.S.T. and units are shown on diagram on page 168.

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12. *The Organisation of Tractor Companies attached to Heavy Artillery.*

(i) Mechanical Transport with the Heavy Artillery in this Force went through several stages of organisation.

Originally Heavy Artillery Batteries arrived in this country as independent units, and to each a Tractor Company was allotted.

Orders in connection with transport were forwarded direct to M.T. Companies by Battery Commanders.

This arrangement was very unsatisfactory and a great waste of transport was involved, tractors often being detailed to haul small loads, such as R.E. and Ordnance stores, and water-carts. Furthermore, when a Battery wished to move from one position to another, it was nearly always necessary to borrow tractors from other Companies to replace those in workshops, the result being that the Tractor Companies were split up all over the country.

(ii) In order to obtain better control and to economise the use of tractors, it was decided unofficially to appoint with each Artillery Group (Artillery Brigade) the senior A.S.C. Captain of one of the Tractor Companies allotted to the Batteries of the Brigade, as O.C., M.T., the Brigade Group, and all orders for transport were passed through him, and he detailed such tractors from the various companies as he thought fit.

(iii) In the latter part of 1917 the Heavy Artillery was organised into Corps. Establishments for Headquarters of Corps and Brigade Heavy Artillery were put up to the War Office, approved, and embodied in Establishments issued in January 1918.

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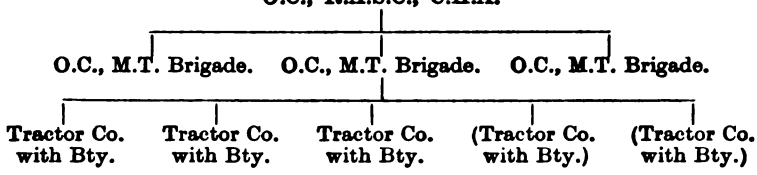
The Headquarters of C.H.A. Establishment included an A.S.C. Major, who was styled O.C., A.S.C. Corps Heavy Artillery, with an Adjutant, and he was responsible for the administration of all Tractor Companies attached to the Corps.

In each Brigade R.G.A. Headquarters, an A.S.C. Captain was appointed who controlled the Tractor Companies attached to the Heavy Batteries which formed a Brigade.

The system of control of Corps Heavy Artillery was then as follows:



(iv) It was found that, when the Heavy Artillery Tractor Companies were grouped, it was possible to reduce the number of officers and other personnel in the Tractor Companies.

13. *Reorganisation of Transport with Heavy Artillery.*

(i) In the middle of 1917 it was found necessary to improvise some form of trailers for tractors in substitution of tractor trucks, which were not forthcoming in the quantity required.

G.S. Waggons were first experimented with, and about 150 were converted for use as trailers.

A hundred buck-waggons were then obtained from East Africa, but unfortunately the standard type as demanded were not sent, and their conversion involved a considerable amount of work in consequence.

Pontoon waggons were also used.

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(ii) During the operations in November 1917 the bulk of the Heavy Artillery and Siege Batteries was concentrated in front of Gaza, and the Batteries only retained two tractors each, the remaining tractors being used for the transport of ammunition for the XXth and XXIst Corps.

In the latter stages of operations, Companies with the least tractors in workshops were detailed for transport of the forward batteries. On the conclusion of the winter campaign it was found that the tractors were very widely separated, and to bring them together to their original units would necessitate a large number of lengthy cross-journeys, and they were therefore reallotted.

It was also found that the converted waggons were not satisfactory, as the wear and tear of them was heavy and their carrying capacity was small, namely:

1 tractor with two trucks could carry 20 tons.

1 tractor with two buck-waggons could carry 5 tons.

1 tractor with three G.S. waggons could carry 4 to 5 tons.

1 tractor with three pontoons could carry 6 tons.

It was therefore decided to ask that 3-ton lorries should be added to the establishment of Tractor Companies in lieu of trucks, and this was approved.

Reorganisation on this basis began in January 1918, and by March 1918 the majority of lorries asked for had arrived from home.

(iii) About May 1918 it was found necessary to submit another scheme for reorganisation of Tractor Transport, as units had arrived from Mesopotamia and England without their full complement of

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trucks and it was not expected that the trucks asked for from home would be forthcoming. However, in June the trucks had arrived, and it was then possible to give Heavy Artillery Batteries a more liberal allowance of transport.

INSPECTION REPORT

Type and No. .....
Cooling system .....
Engine .....
Governors .....
Compression .....
Engine details .....
Lubrication.....
Clutch .....
Cardan shaft.....
Gear box .....
Radius rods .....
Chains.....
Sprockets .....
Foot brakes .....
Hand brake .....
Back axle .....
Diff. gear.....
Back wheels .....
„ springs.....
Steering .....
Axle arms .....
F. axle .....
F. wheels.....
F. springs .....
Chassis .....
Bodywork .....
General .....
.....

Signature.....
Date.....

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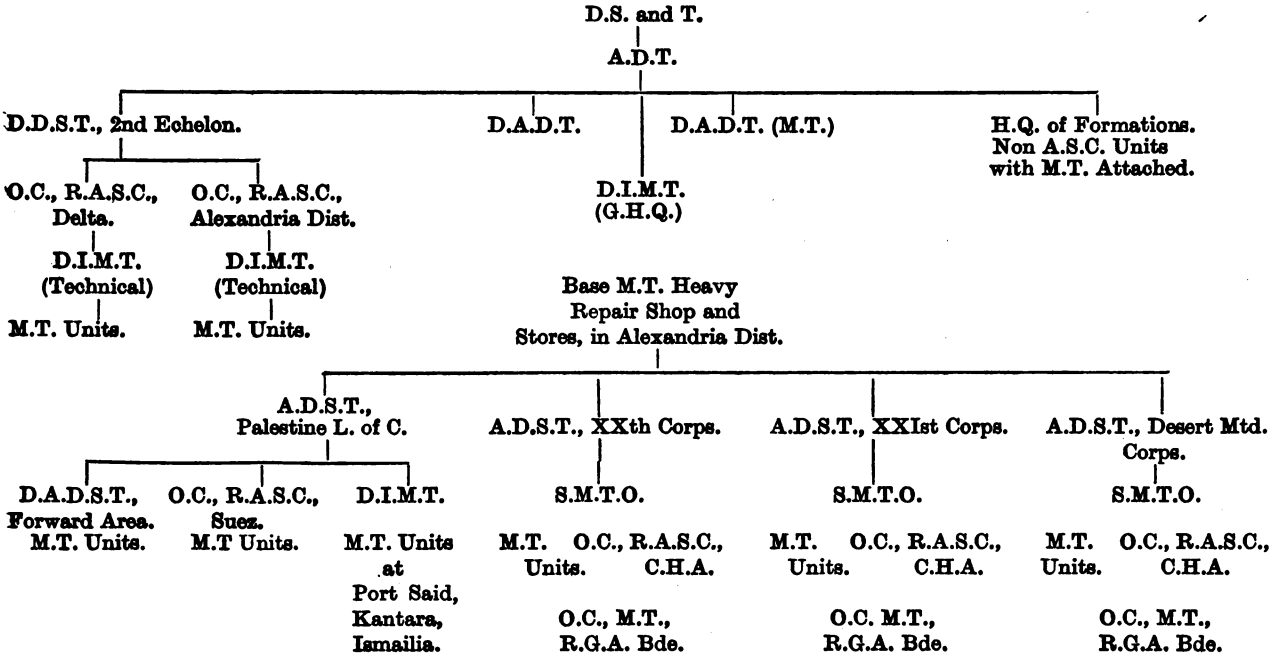
CHANNELS OF COMMUNICATION BETWEEN SUPPLY AND TRANSPORT DIRECTORATE AT G.H.Q., 1ST ECHELON, AND M.T. UNITS



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14. *Vehicle Record.*

(*a*) When vehicles were received in this Force, a Disembarkation Return was forwarded by the Receiving Base to General Headquarters, 1st Echelon (Pro forma A, page 171), and a telegram was also sent to General Headquarters, 1st Echelon, stating the number and types of vehicles landed.

Numbers to be allotted to these vehicles were then forwarded by 1st Echelon to the Base.

(*b*) Upon receipt by General Headquarters of the Disembarkation Return, Transfer Cards were made out in duplicate (Form B, page 172), and both despatched to the D.I.M.T. of the area in which the vehicles were landed. A further card (Form C, page 173) was made out and retained at General Headquarters.

(*c*) Each week the D.I.M.T. or S.M.T.O. forwarded to G.H.Q. a statement of distribution of Mechanical Transport, showing by units the whole of the vehicles under their jurisdiction (Form D, page 174). This statement was supplemented by a further statement, Return of Moves of Mechanical Transport Vehicles (Statement E, page 175), and all differences from week to week in the Statement of Distribution of Mechanical Transport in each area had to be accounted for in the " Return of Moves." That is, the vehicles in each different area were treated as a Stock Account, and all additions or deductions or transfers within that area were recorded in the Return of Moves.

(*d*) Upon the receipt of the statement marked D and E at General Headquarters, the Moves Return was entered up on cards marked C, the returns being filed and numbered for reference.

(*e*) When a vehicle was despatched from one

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area to another, the D.I.M.T. of the despatching area forwarded both the transfer cards (marked B) to the D.I.M.T. of the receiving area, thereby advising him that the vehicles had been transferred to his jurisdiction.

(*f*) At General Headquarters, upon a vehicle being shown as despatched from one area, the card for that vehicle, marked C, was transferred to suspense file until such time as the vehicle was acknowledged by the D.I.M.T. of the area to which the vehicle had been sent. If the vehicle were not acknowledged within reasonable time, the matter was taken up by General Headquarters.

Card B was kept in duplicate by the D.I.M.T. In one file the cards were arranged in numerical order, and in the other the cards were arranged according to the unit on whose charge the vehicle stood.

(*g*) At General Headquarters the cards (specimen C) were kept in numerical order by types and makes of vehicles for each of the respective areas.

(*h*) A register was kept at General Headquarters and entered up weekly, showing under the different classes of vehicles the number taken on and struck off the strength of the Force during the week.

By this means a record was kept showing how and when differences in the total number of vehicles in the Force had arisen, and was regarded as a "Stock Account."

15. *Writes-Off.*

These came under two categories:

(1) Vehicles boarded and written off as obsolete or lost through misadventure during normal periods.

A Court of Enquiry was held on such vehicles

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A

W.D. Number.	Make.	Type of Vehicle.	Year.	Carrying Capacity.	H.P.	Engine Number.	Chassis Number.	No. of Cylinders.	Size of Tyres.		Former Number.	Remarks.
									Front.	Rear.		

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B.

W.D. No..... Make..... Type..... Year..... Carrying Capacity.....

H.P..... Engine No.....Chassis No..... Cylinders..... Tyres..... Front..... Rear.....

Former No.....

TRANSFERRED

Date.	From		To		Initials of O.C., M.T.		Remarks.
	Unit.	Section.	Unit.	Section.	Despatch.	Receiving.	

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C.

Type of Vehicle..... Make..... W.D. No.....

Date.	Unit.	Remarks.

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D.

DISTRIBUTION OF MECHANICAL TRANSPORT

District..... Date.....

Unit and Location.	Cycles.		Cars.		Ambulances.		Lorries.					Vans.		Caterpillars.		Waggons converted.				Remarks.
	Combination.	Solo.	Ford.	Others.	Ford.	Others.	3-ton.	W/shop.	Store.	F.W.D.	Various.	Ford.	Various.	Tractors.	Trucks.	S.A. Buck.	G.S.	Pontoon.	Drivers A.S.C., M.T.	

Type of Lorry to be shown in Remarks Column.

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E.

RETURN OF MOVES OF M.T. VEHICLES IN.....DISTRICT

For.....

Date.	W.D. Numbers.	Class of Vehicle.	Type of Vehicle.	Make.	Transferred from		Transferred to		Remarks.
					Unit.	Place.	Unit.	Place.	

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and necessary authority obtained prior to their being struck off charge.

(ii) *Battle Casualties.*—The vehicles which were lost as the result of enemy action or during active operations.

Vehicles in this category were treated as battle casualties, and it was decided by D.Q.M.G., with the concurrence of the Financial Adviser, that a vehicle could be struck off charge on the certificate of a G.O.C. to the effect that it had been lost as a result of operations.

Number of vehicles so struck off up to end of the operations of 1918 were: Motor-cycles, 83; cars and vans, 27; ambulances, 9.

16. *Company Records.*

In addition to the usual Company books, the following special books were kept:

(*a*) Section books kept by each Section Officer.

(*b*) Petrol, Oil, and Grease Account Book.

(*c*) Vehicle Equipment Register.

(i) *Section Book.*—Army Book 136 was used as a Section Book, and this was ruled out in the manner shown on page 177, and kept as follows:

Daily Routine (A).—This was a routine for the care of vehicles laid down by the D.A.D.T. (M.T.). No entry regarding it was made in Section Book.

Weekly Routine (B).—The Section Sergeant reported daily to Section Officers the lorries which had been examined that day and lubricated in accordance with the printed weekly routine. (See specimen for Albion Lorries, pages 181, 182.)

The Section Officer entered this up in the Section Book in Column B.

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B	C			D	E	F			W.D.	} Drivers.
All.	Chains removed and cleaned.	Tests.	Crank Case cleaned out.	All.	Fully inspected.	Gear Box and Differential cleaned out.	Wheels drawn.	Sprocket bearings cleaned out.	Date.	Defects noted and Action taken.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
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Centre of Army Book 136.

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Fortnightly and Monthly Routine (C) *and* (D).—These routines were always carried out under the supervision of the Section Officer, and were recorded by him in Columns C and D.

Inspections (E).—The Section Officer by frequent inspection of his lorries made sure that (*a*) and (*b*) were being properly carried out.

In addition, he himself made a thorough inspection of each lorry monthly and handed a detailed report to his C.O. (see specimen), and recorded the inspection in Column E.

Quarterly Routine (F).—The quarterly routine was usually carried out in the shops and was recorded in Column F.

Defects Noted.—The Section Officer entered in the last column the repairs needed on the date they were noted, and put on record when the necessary work had been done. He reported to O. i/c Workshops in writing anything that needed early workshop attention.

Log Books.—The Section Sergeant entered in the Vehicle Log Books (B), (C), (D), (E), and (F), and the Section Officer examined and initialled the Log Books on the 15th of each month.

This Section Book was handed to the C.O. on the 1st and 15th of each month for his inspection and initialling.

SECTION OFFICER'S INSPECTION

Lorry..... Date.....

Starting handle .....

Radiator .....

Rubber connections .....

Fan and bracket .....

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Fan belt tension.....

Wiring .....

Contact breaker.....

Engine suspension bolts .....

„ bearing bolts .....

Steering box bolts .....

Compression: 1 cylinder.....

„ 2 „ .....

„ 3 „ .....

„ 4 „ .....

Engine running .....

„ controls .....

„ governors.....

„ lub. system .....

Left pivot pin.....

„ front wheel bearing play .....

„ „ „ tyre.....

„ „ spring shackles .....

„ „ „ clips .....

Right pivot pin .....

„ front wheel bearing play .....

„ „ „ tyre.....

„ „ spring shackles.....

„ „ „ clips .....

Drop arm .....

Steering joints (all).....

Clutch lining.....

„ adjustment.....

„ withdrawal connections .....

„ collar.....

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Radius rod bushes .....
„ „ adjustment.....
Change speed assembly.....
Gear box suspension bolts .....
„ „ lid nuts .....
„ „ front bearing.....
„ „ glands.....
Gears and oil .....
Propeller universal joints .....
Body and chassis bolts and rivets .....
Cross member bolts .....
Left back tyre .....
„ „ spring .....
„ „ „ clips .....
„ „ „ shackles.....
„ „ wheel-bearing play .....
Right back tyre .....
„ „ spring.....
„ „ „ clips .....
„ „ „ shackles .....
„ „ wheel-bearing play .....
Foot brake lining and drum .....
„ „ drum bolts .....
„ „ adjustments .....
„ „ connections .....
Hand „ lining.....
„ „ adjustments .....
„ „ connections .....
Left chain .....
„ „ adjustments.....

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Left sprockets .....

„ jack shaft bearing play .....

Body work and dash.....

Dash bracket bolts .....

Floor .....

Tarpaulin .....

Tail-board and chains .....

Lorry equipment .....

.....

O. i/c Section.

CARE OF "ALBION" LORRIES

DAILY

GREASE—
Fan and pump spindle,
Steering gear,
Clutch withdrawal ring,
Rear end of clutch shaft,
Rear end of propeller shaft.

Note.—Grease caps must be filled, screwed down hard, and this operation repeated until grease comes out through the bearing. Grease caps must be left screwed down hard, or they will be shaken off on the road.

EXAMINE and tighten or adjust—
Steering gear,
Spring clips,
Body bolts,
Foot and hand brakes for free movement.
Remove any stones wedged between the rear tyres.

Note.—A split-pinned nut, or one held by rust, does not necessarily mean a tight bolt.

OIL—
Drain oil from the crank chamber.
Fill up the mechanical lubricator and see that the filter is clean.

FILL UP THE OIL CUPS ON—
Front springs,
Foot pedal tube,
Change gear cross tube,
Foot brake cross tube,
Hand brake compensating shaft,
Hand brake cross tube,
Hand brake actuating cam spindle,
Hand brake bracket,
Radius rod bearings on cross shaft,
Radius rod,
Rear spring.
Oil all moving parts that are without cups, such as pin joints of governor, carburettor, and ignition gear, mechanical lubricator, spindles, etc.
Clean and paint with old oil the sides and ends of the front and rear springs.

Note.—Make sure that the oil reaches the part to be lubricated.

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WEEKLY OR EVERY 250 MILES

OIL—
Squirt two or three drops of oil, and not more, into the magneto oil holes.
Fill the gear-box with gear oil to the level of the test-cock, and no higher.
Fill front and rear wheel hubs with clean gear-oil.
Note.—NEVER remove inspection doors, oil plugs from wheel hubs, etc., until they and the surrounding parts have been cleaned.

EXAMINE and tighten or adjust—
For leakage of oil past leather washers behind wheels,
Chassis cross members and gear-box front bracket, for cracks,
Chassis for loose rivets and bolts,
Clutch adjustment,
Chain adjustment,
Radius rods and nuts,
Steering thoroughly, jacking up the front wheels for the purpose,
Footbrake for adjustments, and see that all the joints are free.

FORTNIGHTLY OR EVERY 500 MILES—
Remove chains, clean thoroughly in paraffin, examine for badly worn links, and soak in hot tallow and black lead.
Test side brakes for adjustment.
Examine engine generally, for compression, knocks, etc.
Examine front and rear wheels for end play.

MONTHLY OR EVERY 1,000 MILES—
Remove wheels and examine bushes and leather washers.
Jack the weight off the springs, and oil between the leaves as far as possible.
Drain oil from governor case and refill with 3 pints of clean oil.
Fill steering gear-box half full with gear oil.
Flush out radiator and water-circulating system and refill.

EVERY THREE MONTHS—
Empty the gear-box and differential casing, wash out with paraffin and refill with fresh gear oil to the level of the test-cock.

(ii) Petrol, Oil, and Grease Account was kept in Army Book 124, which was ruled out as shown on page 183.

No other book accounting for oil, grease, etc., was kept, excepting the storeman's rough Day Book, from which the totals for the Account Book were taken.

(iii) *Vehicle Equipment Book.*—This record was kept in a suitable book and was used as a check on tools and equipment of vehicles.

A page as below was ruled out for each vehicle, and a check made every fortnight (*vide* page 184).

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Date.	Engine Oil.			Gear Oil.			Grease.			Carbide.			Petrol.			Petrol Tins.			Paraffin.		
	Drawn.	Issued.	Stock in hand.	Drawn.	Issued.	Stock in hand.	Drawn.	Issued.	Stock in hand.	Drawn.	Issued.	Stock in hand.	Drawn.	Issued.	Stock in hand.	Drawn.	Issued.	Stock in hand.	Drawn.	Issued.	Stock in hand.
August 1 .	—	—	—	—	—	—	—	—	—	—	—	—	100	80	20	—	—	—	—	—	—
„ 2 .	—	—	—	—	—	—	—	—	—	—	—	—	100	100	20	—	—	—	—	—	—
„ 3 .	—	—	—	—	—	—	—	—	—	—	—	—	200	80	140	—	—	—	—	—	—
„ 4 .	—	—	—	—	—	—	—	—	—	—	—	—	80	120	100	—	—	—	—	—	—

Note.—Columns to be added for petrol boxes.

The issuing storekeeper will keep a Day Book, showing his issues to individual vehicles, etc. From this Day Book the day's totals for this ledger sheet will be taken.

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Inspection of this book showed at a glance if the equipment was being checked regularly and kept up.

VEHICLE, No. .....

	February 15.	March 2.	March 16.
Funnel . . .	*	*	X
Spanner, 1′ × ⅞″ .	*	X	*
Tarpaulin . . .	*	*	*
Headlamps, 2 . .	*	*	*
Etc.			

* Showed that the item was in possession.
X Showed that the item was deficient.

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CHAPTER X

MECHANICAL TRANSPORT DURING MAJOR OPERATIONS, 1917 AND 1918

PART I

1. *General.*—In dealing with this subject, the various phases of operations and the movements of M.T. units which kept the troops supplied are described briefly.

2. *Roads.*—The theatre of war stretched from the Tripolitan frontier, through Egypt, Sinai, Palestine, and Syria to Alexandretta and Aleppo, so that the roads and climatic conditions were very varied.

On the western frontier the roads were sand tracks, and no vehicles heavier than light cars and vans could be employed.

In Egypt and the Canal Zone the work of the Mechanical Transport was restricted to the towns of Alexandria, Cairo, Port Said, Ismailia, and Kantara, all provided with metalled roads.

In the Sinai Desert the only roads were the sand tracks, and these were made practicable for light cars, vans, and motor ambulances by pegging lengths of wire netting on the sand. These wire roads enabled light cars and ambulances to travel with ease, but were unsuited for other traffic.

In Palestine, south of the line Jaffa-Ramleh-Jerusalem, the only existing metalled rod was

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the one from Beersheba; and this, for miles at a stretch, was merely a mass of loose stones lying on a road-bed.

In the advance from Gaza via Deir Sineid to Ramleh there was only an earth track, which, immediately the rains started, became impassable for all Mechanical Transport except light cars, and even these at times were unable to get through. The road running west to east from Jaffa through Ramleh, Latron, Jerusalem to Jericho was metalled, but in a very bad state of repair. From Jaffa to Latron the road is level, but beyond Latron it enters the Judæan Hills, ascending to Jerusalem and descending to Jericho. This road is cut in the sides of the hills and has many hair-pin bends, in some places there are four in succession, and on occasions loss of nerve or mechanical breakdowns resulted in vehicles leaving the road and rolling down the mountain-side.

In this part of Palestine the only stone for road construction was a soft limestone, which rapidly broke up.

During the spring and summer of 1918 an amount of road construction was done. The bulk of the stone required was collected from quarries and fields and distributed by Mechanical Transport. In the advance in the autumn of 1918 the roads in the newly acquired territory were, for the most part, in a very bad condition. Where they were metalled they were in a very bad state of repair, and in many areas there remained nothing but an earth track, thinly covered in places by loose stones.

The gradients in many places, particularly at the crossing of the Jordan at Benat Yakub, around

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Nazareth, Tiberias, and in the Lebanon district, were very steep.

In this country there are many wadis, bridged by culverts. Most of these culverts, after they had been strengthened, were suitable for lorry traffic, and where not, deviations through the wadi were made. During the dry weather, whenever the nature of the country permitted, side-tracks were made, parallel to the metalled roads. These were used as much as possible by all traffic, and the metalled road kept closed. Many of these side-tracks were very good and stood the strain of heavy traffic remarkably well.

One of the difficulties the Mechanical Transport had to contend with was the fine, gritty dust. During the dry weather the roads in many places were 6 inches deep with this dust, which worked into all parts of the engines and caused considerable wear.

3. *Road Discipline.*—To conserve the roads and vehicles and to prevent accidents, great attention was paid to road discipline, and speeds were limited by a General Routine Order to 6 miles per hour for lorries and 15 for vans and ambulances.

4. *Loads.*—The maximum loads allowed in this force were :

Caterpillar tractor truck, up to	10 tons.
South African ox-waggon	5,000 lb.
Pontoon or G.S. waggon adapted as trailers for caterpillar tractors	3,000 lb.
8-ton Peerless	8 tons.
8-ton Albion	2½ tons.
Ford Van	600 lb.

At times during the wet season, and on many of the roads, and also in moving across country,

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it was quite impossible to load vehicles up to anything like this standard.

Part II

Operations from October 27 up to Capture of Gaza, November 7

1. On October 27 M.T. units in this theatre were :

At Alexandria :
- Base M.T. Depot (500 Company).
- 644 Company, Base Heavy Repair Shop.
- 303 Company, Ammunition Park.
- 906 Company, Petrol Company.
- 981 Company, Artillery Tractor Company.

At Cairo :
- 772 Company (15th E.M.R.U.).
- 790 Company, Headquarters (Ford Van Company, operating on Western Desert).

At Kantara :
- Advanced Base, M.T. Sub-Depot.
- 52nd F.A.W.U.
- 347, 493, 905, and 907 M.T. Companies.
- 894 Company (35th M.A.C.).
- 810 Company (detachment of 6th F.W.D. lorries only).

Sheik Kuran :
- 972 Tractor Company (Supply).

Rafa :
- Advanced Base M.T. Sub-Depot.

Belah :
- 895 Tractor Company.
- 956 (Ford Van) Company.

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Attached XXth Corps Heavy Artillery:
963, 966, 980 Tractor Companies.
964, 965 Tractor Companies lent by XXIst Corps.
Attached XXIst Corps Heavy Artillery:
811, 904, 951, 952, 955 Tractor Companies.
961 Tractor Company (eventually attached to Tank Corps).

The use of M.T. south of the line Gaza-Beersheba was restricted to tractor units and Ford cars.

2. *Beersheba Operations.* — Reconnaissances, carried out in Ford cars from Imara and Karm towards Beersheba, showed that the ground was firm and that a fairly hard track (unmetalled) existed, which, provided the weather held, would probably be suitable for mechanical transport.

Consequently the Lorry Companies 347, 905, and 907 were brought up and detrained at Karm, close to railhead.

These Companies, before and during operations, rendered valuable service in the transport of supplies ammunition, and water. The lorries used for ammunition services went straight across country, right up to the gun positions, and were often under fire.

As lorries could not get right up to railhead, supplies were first off-loaded on to caterpillar trucks, taken four miles to Irgeig, and there re-loaded.

3. Beersheba was captured on October 31 and the attack on Gaza followed. The roads from Beersheba to Gaza and towards Hebron were possible for Mechanical Transport, which still continued to work on Supplies.

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Operations from the Fall of Gaza to the Capture of Jerusalem

The fall of Gaza on November 7 was followed by the pursuit of the Turkish Army, carried out by the XXIst Corps and the Desert Mounted Corps from the right.

The XXth Corps remained in the neighbourhood of Beersheba.

One Division (60th) operated west of the Beersheba–Junction Railway, one Division (53rd) and Corps Cavalry operated on the Beersheba–Hebron Road, and two Divisions (10th and 74th) were held in reserve at Karm.

Supplies for Beersheba were brought by divisional train from Irgeig and by mule-drawn trucks on the Turkish Railway from Karm.

The Cavalry, whose horses had had practically no water for three days, were supplied by 347 Company fitting up their lorries with 400-gallon tanks. These tanks were filled at Beersheba from the existing pipe line, and the lorries on this service ran continuously twenty-four hours a day for five days, the drivers snatching sleep when and where they could.

The operations on the left flank had progressed very rapidly, and on the 13th the troops engaged (XXIst Corps and Desert Mounted Corps) were many miles from railhead.

Originally it was only intended to employ in the field 347, 905, and 907 Lorry Companies; but in view of this rapid advance, 906 Company was moved up from Alexandria, leaving only 303 and 493 Companies in Alexandria and Kantara. Local Transport work in those two places was at that

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time very heavy, and the War Office was asked to send out two more Lorry Companies, in addition to the three already advised as being on their way.

On November 17 the XXth Corps moved across to Gaza, leaving the 53rd Division and the Corps Cavalry operating on the Beersheba–Hebron Road, and 907 Company was left behind to deal with this detachment, known as Mott's Detachment. The other three Companies, 905, 906, and 347, moved across with the XXth Corps.

For the troops engaged in the west of Palestine, railhead was still at Gaza, whence supplies had to be taken to the Desert Mounted Corps and four Infantry Divisions fifty miles away.

Unmetalled roads ran from Gaza, north-west to Julis, to Junction Station, and Latron.

Jaffa was captured early on in November 1917.

Towards the end of November, 1009, 1010, 1011 Albion Lorry Companies arrived in Palestine.

Jerusalem was occupied on December 9, 1917.

About the middle of December heavy rains began to fall and the road from Deir Sineid to Latron became impassable for all mechanical transport except tractors, and even these were stuck at times for days together.

4. *Shortage of M.T.*—About this time it was found that although there were sufficient lorries for food supplies, there were not enough to carry ammunition, so the War Office was asked to send out two more Peerless Lorry Companies.

5. *Supplies.*—The system of supply from the second half of November 1917 was briefly as follows:

For the forces operating near Jaffa and west of Jerusalem, supplies were taken by one group of

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lorries from Deir Sineid to Junction Station, where they were dumped and taken on by another group.

A landing-place was opened up at Sukereir and supplies were off-loaded on surf boats, brought ashore, and taken by camels to Ramleh, where lorries picked them up and carried them to Latron.

About December 8, Jaffa was opened up for supplies, which were off-loaded on surf-boats and taken from the quay to Sarona by lorries. Supplies were also brought up on the military railway, as its construction progressed, to Esdud, Yebnah, and Derian, and thence to Ludd Supply Depot by camel transport. At the same time the Turkish Light Railway was used from Deir Sineid to Junction Station.

The forces on the Beersheba–Hebron Road were still supplied by 907 Company; but after the capture of Jerusalem a section of 906 Company was attached to it and convoys were run daily from Beersheba to Jerusalem, a section of 30 lorries going up one day and returning the next.

When the lorries began this run, the surface of the road as far as Hebron was good; but when the rains began early in December, it deteriorated very rapidly under the heavy traffic. The road wound round the sides of hills that drop away steeply, and, often near the edge, the revetting was too weak to carry the heavy traffic ; so that on the narrower sectors, where lorries had to pass one another, the walls sometimes collapsed, endangering both driver and vehicle.

During the wet weather great difficulty was also experienced at the Dump. The ground was of a spongy nature, and, being surrounded on all sides by higher ground, quickly became sodden. The

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lorries therefore could not enter, and had to be off-loaded on the road, which was on an embankment some 10 feet above.

For the drivers it was not only a question of long hours at the wheel, very often fifteen to eighteen at a stretch, but also countless troubles on the road caused by the strain on the lorries. Chains broke frequently, and drivers, already soaked with rain, had to lie in the cold mud to repair them. Snow also was frequent in the high regions round Hebron, and it was a constant struggle to get the lorries along.

Christmas 1917 was specially difficult; the weather in the mountains was abominable, and snow fell thickly at Hebron. Practically every lorry on the journey was in trouble, and sometimes the north-bound Echelon did not reach Jerusalem till late in the evening, and returned next day to its Headquarters nine or ten hours behind time.

Front springs were continually breaking, and replacements could not be had. At the same time tyres were rapidly ruined by the rough surface and by the use of non-skid chains, without which the loaded lorries could not have climbed the slippery grades.

Part III

1. *Work of Tractor Companies with Heavy Artillery.*—The distribution of Tractor Companies with the two Corps (XXth and XXIst) has already been shown.

Prior to the assault on Gaza, tractors were being used for the hauling of ammunition from railhead

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to dump in the day-time, and thence to the battery positions by night, a daily run of 25 miles.

In addition many battery moves were made; 963 and 964 Companies, for example, moved their batteries into eleven different position in fourteen days.

2. *Work of the XXth Corps Tractor Companies.*—(i) 963 and 966 Companies and their respective batteries, together with 964 Company, attached to the 10th Heavy Battery, were ordered at the end of October to join a convoy which was being formed by the 96th H.A.G. at Beit Jerjar. Here they were met by 990 Company, attached to 440 Siege Battery, and the whole convoy moved up to Jerusalem via Julis, Mesmiyeh, Junction Station, and Latron. The journey was performed in a remarkably short time, the daily run averaging 22 miles.

(ii) Nearing Jerusalem, the tractors began to show signs of damage. In Jerusalem, however, the means for carrying out the heavy repairs needed were found in the German M.T. Depot, which, with its engines, lathes, etc., had been captured practically intact.

(iii) At Jerusalem the tractors of all the Companies were " pooled " for the purpose of supplying composite transport for the four batteries in the Group. The name given to this formation was 96th H.A.G. Tractor Park.

(iv) Similarly in March a Tractor Park for the 97th H.A.G. was formed by grouping 983 and 1007 Companies, the latter of which arrived in Palestine in November 1917.

(v) 990 Company arrived in Alexandria in October 1917, and almost immediately moved up

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to Belah, where it remained till March 1918, moving guns and ammunition.

In March 1918, together with three tractors from 1030 Company, it moved 422 Siege Battery to Ain Sinia via Jerusalem, and there joined the 97th Brigade Tractor Park. On April 20 it was transferred to the 96th Brigade Tractor Park.

(vi) 1030 Company arrived in Alexandria in December 1917, and was moved up the line to Belah in January, where it was engaged in ammunition hauling. In February 1918 five of its tractors brought up the 97th Brigade Headquarters to Jerusalem, and were then attached to the 96th Tractor Park. The remaining three tractors came up later and were attached to the 97th H.A.G. Park.

3. *XXIst Corps Tractor Companies.*—After the advance from Gaza the tractors of the various Companies were very widely separated, and for weeks some of them were out of touch with their workshops.

A park was formed for the tractors remaining in the Deir Sineid district, and was used for collecting ammunition from the landing-place at the mouth of the Wadi Hessey and delivering it to places around Esdud, Yebnah, and Ramleh.

When Sukerier was opened up as a landing-place, the park moved there and continued carrying ammunition to Junction and Ramleh.

The XXIst Corps Heavy Artillery Park was formed near Jaffa in January 1918.

PART IV

1. In March 1918 the line held by our troops extended from the north of Jaffa to a point about

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20 miles north of Jerusalem on the Nablus Road, and thence to the Bridgehead on the Jordan River, about 10 miles from where it flows into the Dead Sea.

The XXIst Corps was in front of Jaffa, and the XXth Corps was principally north of Jerusalem, with a part in the Jordan Valley with the Desert Mounted Corps.

XXTH CORPS (HEADQUARTERS, JERUSALEM)

2. *Tractor Companies* with Corps Heavy Artillery. Headquarters, Ain Sinia.

963 with 378 Siege Battery.
964 ,, 440 ,, ,,
966 ,, 383 ,, ,,
980 ,, 10th and 195th Heavy Battery.
983 ,, 422 Siege Battery.
990 ,, 443 ,, ,,
1006 ,, 379 ,, ,,
1007 ,, 420 ,, ,,
1030 ,, 445 ,, ,,

Lorry Companies at Jerusalem.—905, 907, 1011, 1039, drew supplies at Jerusalem and delivered to troops in the Jordan Valley and on the Nablus Road.

Lorry Companies at Latron.—347, 1040, drew supplies from Latron dump and delivered to Jerusalem Supply Depot.

E.M.R.U.s at Jerusalem.—1st, 3rd, 10th, and 13th.

E.M.R.U. at Ramallah.—12th.

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XXIst Corps (Headquarters, Jaffa)

Tractor Companies with Corps Heavy Artillery, Headquarters Sarona.

811 with 423 Siege Battery.
904 ,, 189 and 202 Heavy Battery.
951 ,, 209 Siege Battery.
952 ,, 322 ,, ,,
955 ,, 43 and 292 Siege Battery.
965 ,, 380 Siege Battery.
982 ,, 304 ,, ,,
984 ,, 134 ,, ,,
989 ,, 320 ,, ,,
1008 ,, 314 ,, ,,

Lorry Companies at Jaffa.—1010 Company supplied troops at Sarona from Jaffa.

E.M.R.U. at Jaffa.—2nd.

G.H.Q.

Tractor Companies at Belah.—895, engaged on R.E. work, carrying stones for road making, etc.

Tractor Companies at Ramleh.—972, engaged on R.E. work, carrying stones for road making, etc.

Lorry Companies at Ramleh.—906, 1009, delivered to Jerusalem Supply Depot and also helped to replenish supply at Latron from Ludd.

E.M.R.U.s at Ludd.—9th and 11th.

E.M.R.U. at Surafend.—956 Ford Van Company, engaged on various duties, such as postal services, etc.

E.M.R.U. at Surafend.—4th.

Chain of Supply

3. (i) *XXth and Desert Mounted Corps.*—Supply trains ran on the Military Railway to Ludd, where

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a large supply depot was formed. Other trains ran on the Turkish Railway to Junction Station, and supplies were taken from there by camels to a dump at Latron.

Latron Supply Depot was also filled from Ludd by lorry convoys.

The supply depot at Jerusalem, which fed all the troops in the Jordan Valley and to the north of Jerusalem, was replenished daily by lorries working between Latron and Jerusalem.

At one time as many as 150 lorries a day were employed on this service, the drivers turning out at 05.00 hours and returning to camp about 18.30 hours, after a very tiring day.

Excellent road discipline was kept; convoys miles in length could be seen wending their way up and down the hills, each lorry keeping its correct distance from the one in front, and a car travelling at a good speed could pass them from rear to front without a check.

At some of the narrower parts of the road and also in sections where a large number of hair-pin bends existed, controls were maintained by means of notice-boards and police.

All down traffic gave way to up traffic.

When the railway was opened up to Jerusalem from Junction Station, the convoys running from Latron to Jerusalem became unnecessary.

The Jerusalem–Jericho run was still more difficult. The drop between Jerusalem and Jericho is about 2,000 feet, and at a first glance it appeared impossible for lorries to climb up and down the hills. The heat and dust in the Jordan Valley were almost unbearable. The faces of the drivers on returning from this run, which took ten hours,

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were so encrusted with dust and sweat that it was impossible to recognise them.

(ii) *XXIst Corps.*—The feeding of this Corps presented no difficulties. It was situated round Jaffa, where supplies were landed from surf-boats and distributed by lorries working from the quay, and later by a light railway.

Part V

The Advance in Palestine, beginning September 19, 1918

1. In preparation for these operations, M.T. Companies made special efforts to get their vehicles in good order, and the Peerless lorries with the artillery were fitted with gun-towing couplings, which had been proved to be quite satisfactory.

In the beginning of September, five 6-inch Howitzer Batteries with their transport moved across from Jerusalem to the left flank and joined the XXIst Corps Heavy Artillery. At the same time 1006 and 1073 Tractor Companies from the XXth Corps moved down to the Jordan Valley for duty with the Anzac Mounted Division and Royal Engineers. These Companies carried supplies from the Supply Depot, Jericho, to a secret dump at Obedieh Wadi, and also took R.E. Stores and ammunition beyond the Wadi Auja to the front line. This last service could only be done at night, as the track was under observation and convoys were repeatedly held up by heavy shell-fire.

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2. The distribution of Mechanical Transport on September 18, 1918, was as follows :

XXTH CORPS

Tractor Companies.—811, 966, 980, 990, 1008, 1030.

Lorry Companies.—1010, 1011, 1040.

XXIST CORPS

Tractor Companies.—904, 951, 952, 955, 963, 964, 965, 967, 982, 983, 984, 988, 1007, 1072.

Lorry Companies.—907, 1038, 1039.

DESERT MOUNTED CORPS

Lorry Companies.—905, 906, 1009.

G.H.Q.

Tractor Companies.—895, 972, 1006, 1073.

Lorry Company.—347.

Ford Van Company.—956.

3. On the eve of operations all tractors were engaged in taking up ammunition to the Battery positions and various secret dumps. An adequate supply of petrol and lubricants for the tractors with the Batteries was also stored at these dumps.

4. *Movement of the XXth Corps Heavy Artillery.*—The 10th Heavy Battery and the 205 Siege Battery were made especially mobile by the addition of extra lorries for stores and ammunition, and on the day after the advance started they were taken up the Nablus Road so rapidly that they came into action behind Cavalry patrols just south of Nablus and were able to use open sights for the first rounds. The other Battery, remaining with

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the XXth Corps, concentrated on Nablus Road, but was not required, and the tractors were therefore transferred to other duties.

5. *Movement of the XXIst Corps Heavy Artillery.*—The chief requirements in this Corps were to render the two 6-inch Howitzer Batteries, which were to operate with the Infantry Divisions, thoroughly mobile and independent, whatever the mileage, and to give assistance to the two horse-drawn 60-pounder Heavy Batteries if necessary. To do this, each of the tractor companies attached to the two 6-inch Howitzer Batteries was allotted four extra tractors, one truck, and five waggons.

Four ammunition parks were organised, and a reserve tractor park was formed, consisting of the workshop, store, and 3-ton lorries of four tractor companies.

After the preliminary bombardment the batteries were taken up in support towards Tul Keram, but they did not come into action owing to the rapid advance of the troops, and on reaching Haifa they stopped.

6. *Work of G.H.Q. Tractor Companies.*—The tractor companies attached to G.H.Q. carried supplies, Signal and R.E. Stores through Wilhelma and Tul Keram to Haifa.

7. *Operations of Desert Mounted Corps.*—(i) The Lorry Companies 905, 906, 1009 were concentrated in the Ramleh area.

(ii) 905 Company was divided into two parts: thirty lorries for ammunition, and the remainder for supplies.

The Ammunition Convoy loaded at Ludd on September 18 and reported to Sarona. The next day it followed behind the Cavalry to Leggin,

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where it made its headquarters for five days, during which time the ammunition was dumped at Kakon by a section of the convoy, which ran backwards and forwards to Sarona until the ammunition dump at Kakon was completed.

The Supply section loaded at Ludd for the 5th Cavalry Division and moved off on September 21 to Leggin, and thence to Nazareth and Jenin, returning to Leggin the same night, having completed a run of 100 miles over very difficult roads.

(iii) 906 Company loaded with supplies at Ludd and proceeded on September 20 through Tul Keram and Leggin to El Afulah, where its loads were dumped. On the return journey lorries were loaded with prisoners of war, who were then coming in by thousands.

(iv) 1009 Company loaded at Ludd with supplies for the 4th Cavalry Division on September 20 and proceeded to Tul Keram via Ras el Ain. Owing to congestion of traffic the convoy was late, and in consequence had to push straight through to Leggin, where they were ordered to proceed to Afuleh for off-loading. They reached Afuleh at 18.00 hours, having made a continuous run of fourteen hours without a halt for a meal.

On the 21st the headquarters of the convoy moved to Rantieh, and on the same day the lorries were ordered to Tul Keram, which they reached at 02.15 hours on the 22nd; thence they proceeded to Leggin and Bison, where they off-loaded and returned to Rantieh at 13.00 hours, having completed twenty-four hours' continuous running.

The lorries were now working about 80 miles from the base, which entailed very long hours. This strenuous work was continued up to September

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27, when the Company Headquarters reached Haifa.

(v) On September 20, 1039 Company was attached to Desert Mounted Corps. Their first convoy of 26 lorries was loaded with supplies at Ludd at 05.00 hours on the 21st, and proceeded at once to Leggin, where the convoy was divided, one part going to Afuleh and the other to Jenin and Beisan. The convoy returned to Rantieh, and on the 24th went up with supplies for the 4th Cavalry Division.

(vi) During this time M.T. Companies were working almost continuously day and night, the men snatching sleep when they could. It was impossible to carry on at this pace, and an order therefore was issued that the lorries would stop work for six hours in every twenty-four.

(vii) On September 28, 1011 Company at Ramallah received orders to report to the Supply Dump at 05.00 hours and there to load every available lorry. This was done, and a convoy of fifty-one lorries proceeded on a twenty-two hours' continuous run to Afuleh, where they reported to the Headquarters Desert Mounted Corps.

After four hours' rest, thirty-one of the lorries proceeded to the 4th Cavalry Division refilling point near Semakh. These lorries parked for the night at the Supply Dump at Jisr Mejamie, where the wadi was in flood and impassable owing to the steepness of the banks. A working party of Indians cut away the bank during the night, and at 03.00 hours two lorries were taken across with great difficulty. These were used to tow the remaining lorries, and by this means the whole convoy got through and went on towards Semakh.

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The next obstacle was the bridge over the Jordan, which was reported to be unsafe, and the convoy halted until it had been strengthened, getting across on the morning of September 29.

At Semakh the convoy was ordered to follow on behind the 4th Cavalry Division, which was advancing rapidly on the east side of the Sea of Galilee.

About twelve miles up the Irbid road the convoy was again stopped by an improvised bridge being too narrow. This was widened with railway sleepers, which were carried on the convoy, and thirteen lorries crossed safely. The bridge then collapsed; and, as it was impossible to tow the vehicles across the wadi, owing to the rocky nature of the ground and the steepness of the bank, the drivers rebuilt it, and by 06.00 on the following day all the vehicles had passed safely over, after a delay of twenty hours.

Roads now ceased to exist, and the route lay across open country strewn with large rocks and boulders. At many points it seemed impossible to make further progress, but by digging up smaller boulders and building ramps over those too big to move, the convoy reached Sheik Miskim at 19.00 hours on October 1.

A railway track was used next, and the convoy, travelling at one mile per hour and consuming a gallon of petrol per vehicle per mile, reached Kiswe.

At Kiswe the convoy got on to a road, and, closely following the Cavalry, ran on to Damascus and back for seven miles on the Tiberias Road, where it off-loaded, after having been on the road for eight days.

A letter of thanks was received by the O.C.,

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1011 Company, from the G.O.C., 4th Cavalry Division, in which he expressed the opinion that it was due only to the untiring energy and determination of the officers and men that all the lorries were brought to Damascus through country which appeared quite impassable for Mechanical Transport.

(viii) On September 26, 905, 906, 1009, and 1039 M.T. Companies moved to Haifa, as supplies were about to be landed there. From Haifa convoys worked, via Nazareth and Tiberias, to within ten miles of Damascus, a distance of over 100 miles.

The road was fairly good until Benat Yakub at the River Jordan was reached. From here northwards, for a distance of about ten miles, huge boulders were embedded in the ground, and the retreating Turks had also placed many big stones in the roadway, which had to be removed by the lorry drivers.

(ix) When the railway line between Haifa and Semakh was opened on September 30, the M.T. Companies moved to Semakh, and supplies for 4th Cavalry Division were taken thence, a distance of eighty miles, and off-loaded just outside Damascus.

Some of the supply lorries which ran from Semakh to Damascus were detailed to fetch requisitioned supplies from the neighbouring districts, and were on several occasions under enemy fire.

(x) On October 8 the Lorry Companies Headquarters began to move to Damascus.

(xi) On October 10 lorries were collecting grain from a district thirty miles round Damascus, fifteen miles from our outposts, and, as on several previous occasions, a Cavalry escort accompanied them.

(xii) The tyres were now wearing out rapidly

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owing to the bad roads. A tyre press had already been mounted on a lorry at Ludd to meet this contingency, and it was now sent up to Semakh. On arrival there it was worked day and night for a considerable period.

In order to cope with the spare parts of all description required for lorries and cars, a section of the Advanced Base M.T. Stores, Ludd, was established at Semakh.

(xiii) There was a good deal of sickness at this time, especially in the Companies which were at Semakh, which was due to overwork combined with the conditions in the Afuleh-Semakh area, which is considered to be one of the worst malaria belts in the world. Never over-staffed, numbers were rapidly depleted, so that instead of the usual two drivers, it was a matter of extreme difficulty to provide one man per lorry.

On the advance continuing to Beirut, it was found on arrival there that it was impossible to man all the lorries, and some had to stay immobile. Many drivers, though sick, stuck to their work, and it was largely by the good spirit of the men that the service was maintained. From one Company alone 128 men were admitted to hospital in the early days of October, and another Company had 106 men sick out of 161.

The hospitals at Damascus and other places were filled to overflowing, patients being accommodated anywhere; consequently many of the Companies established their own little hospitals, which were run by themselves, getting what help they could from the medical authorities.

(xiv) Supplies were now being landed at Beirut, and some of the Companies' Headquarters, the

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tyre press, and M.T. Stores Section were moved there.

(xv) Some of the lorries which ran from Damascus with supplies for 5th Cavalry Division were sent via Baalbek right on to Homs, and at night had to travel without lights or with but one side light on every fourth vehicle. Convoys between Kuneitre and Damascus were off-loaded within 500 yards of the line. One particular convoy ran 224 miles, and only one lorry dropped out; and on another occasion the men drove 236 miles with but six hours' sleep.

(xvi) The Cavalry continued the pursuit, and still the M.T. followed at their heels, Headquarters of the Companies moving on to Tripoli and Hama.

(xvii) The 5th Cavalry Division were now at Sheikh Ahmed, near Aleppo. The lorries overtook the Division and followed just behind the 15th Brigade until Aleppo was captured on October 26, and entered it on the same day as the troops, as had also happened when Haifa and Homs were captured.

From Aleppo a lorry convoy was sent on to Alexandretta.

(xviii) Convoys were now running from Tripoli to Homs and from Homs to Hama.

On November 6, 1010 Company arrived at Damascus, was attached to Desert Mounted Corps, and proceeded to Tripoli.

When the rains began in November the roads rapidly became almost impassable—the state of the roads is illustrated by the fact that a convoy of nineteen lorries had 120 chain breakages on a single trip between Homs and Hama—but as the railways were not yet able either to carry sufficient

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supplies to Homs from Beirut or to take them on from Homs to Hama, lorries still had to be used to carry a portion of the supplies from Tripoli to Homs and the whole of the supplies on from Homs to Hama. Lorries converted for running on railway metals were each able to draw three 10-ton loaded trucks, so that with the load carried in the lorry itself 33 tons of supplies were carried per trip. Between them the four lorries regularly took from Homs to Hama about 135 tons of supplies daily.

These conversions were made by one of the (M.T.) Egyptian Mobile Repair Units at Tripoli, the first two lorries being converted in four days. Albions were chosen, because their tracks fitted the railway gauge.

Flanges were belted on from the inside of the wheels, and a rear axle was substituted for the standard front axle.

(xix) The 3rd and 5th E.M.R.U.s, which had all along followed with their workshops, did excellent work in keeping the light cars and motor-cycles on the road, and special mention is due to the staff of the workshops of the lorry companies and the tyre press, who, although having their full share of sickness, worked day and night. All sorts of repairs were carried out in the field, and in one instance a cracked chassis was plated on the road-side.

On another occasion the tyre press, journeying from Beirut to Tripoli, capsized through the road giving way, and fell upside-down in the wadi below. The lorry, a captured German one, was badly damaged, but two days' work brought the dismantled tyre press safely to Tripoli.

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DISTRIBUTION OF MECHANICAL TRANSPORT

SUMMARY

Unit and Location.	Cycles.		Cars.		Ambulances.	Lorries.						Vans.		Caterpillars.		Waggons Converted.			Drivers, A.S.C., M.T.	Remarks.
	Combination.	Solo.	Ford.	Others.		30-cwt.	3-ton.	Workshop.	Store.	F.W.D.	Various.*	Ford.	Various.	Tractors.	Trucks.	S.A. Buck.	G.S.	Pontoon.		
Position at October 31, 1917:																				
20th Corps	—	135	24	1	84	4	136	11	11	15	2	33	—	49	—	72	—	—	—	
21st Corps	—	133	30	—	51	2	1	13	9	—	6	26	1	61	—	22	72	—	—	
Desert Mounted Corps	—	144	18	8	41	—	—	4	4	—	—	41	12	24	43	—	—	—	—	
Total	—	412	72	9	176	6	137	28	24	15	8	100	13	134	43	94	72	—	—	
Position at September 19, 1918:																				
20th Corps	—	177	59	10	82	26	211	19	19	9	9	54	1	102	44	37	23	32	—	
21st Corps	—	203	69	11	123	30	300	17	16	6	13	68	1	107	56	36	62	21	5 (*a*)	(*a*) Trailers.
Desert Mounted Corps	—	224	64	15	74	20	236	8	8	—	7	71	1	17	34	—	—	—	—	
	—	604	192	36	279	76	747	44	43	15	29	193	3	226	134	73	85	53	5	
Total Increase	—	192	120	27	103	70	610	16	19	—	21	93	—	92	91	—	13	53	5	Trailers.
Total Decrease	—	—	—	—	—	—	—	—	—	—	—	—	10	—	—	21	—	—	—	

* Type of lorry to be shown in Remarks Column.

A.P. & S.D., Alex./$\frac{3388}{4624}$/4: 18/5. M.-R.B.

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DISTRIBUTION OF MECHANCAL TRANSPORT

DISTRICT: 20TH CORPS

Unit and Location.	Cycles.		Cars.		Ambulances.	Lorries.						Vans.		Caterpillars.		Waggons Converted.			Drivers, A.S.C., M.T.	Remarks.
	Combination.	Solo.	Ford.	Others.		30-cwt.	3-ton.	Workshop.	Store.	F.W.D.	Various.*	Ford.	Various.	Tractors.	Trucks.	S.A. Buck.	G.S.	Pontoon.		
Position at October 31, 1917:																				
Corps and Divisional H.Q. .	—	2	14	—	—	—	—	—	—	—	—	11	—	—	—	—	—	—	—	
M.T. attached Siege Artillery	—	13	8	—	—	—	—	5	5	—	—	—	—	41	—	72	—	—	—	
Signal Units . . .	—	91	1	—	—	—	—	—	—	—	—	17	—	—	—	—	—	—	—	
Field Ambulances . .	—	24	—	—	84	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Anti-Aircraft Sections. .	—	2	—	—	—	3	—	—	—	—	2 (*a*)	—	—	—	—	—	—	—	—	(*a*) Gun.
Sundry Vehicles. . .	—	3	1	1	—	—	2	4	3	—	—	1	—	—	—	—	—	—	—	
Special attachments for Operations . . .	—	—	—	—	—	1	134	2	3	15	—	4	—	8	—	—	—	—	—	
Total . . .	—	135	24	1	84	4	136	11	11	15	2	33	—	49	—	72	—	—	—	
Position at September 19, 1918:																				
Corps and Divisional H.Q. .	—	5	14	10	—	—	—	—	—	—	—	15	1	—	—	—	—	—	—	
M.T. attached Siege Artillery	—	42	26	—	—	—	52	11	11	9	—	4	—	102	44	37	23	32	—	
Signal Units . . .	—	86	1	—	—	4	1	—	—	—	2 (*b*)	13	—	—	—	—	—	—	—	(*b*) 1 Electric Light and 1 Wireless.
Field Ambulances . .	—	20	—	—	82	—	—	—	—	—	—	1	—	—	—	—	—	—	—	
Anti-Aircraft Sections. .	—	3	3	—	—	16	—	—	—	—	6 (*c*)	3	—	—	—	—	—	—	—	(*c*) Gun.
Sundry Vehicles . .	—	10	12	—	—	6	11	6	6	—	1 (*d*)	16	—	—	—	—	—	—	—	(*d*) Laboratory.
Special attachments for Operations . . .	—	11	3	—	—	—	147	2	2	—	—	2	—	—	—	—	—	—	—	
Total . . .	—	177	59	10	82	26	211	19	19	9	9	54	1	102	44	37	23	32	—	
Increase . . .	—	42	35	9	—	22	75	8	8	—	7	21	1	53	44	—	23	32	—	
Decrease . . .	—	—	—	—	2	—	—	—	—	6	—	—	—	—	—	35	—	—	—	

* Type of lorry to be shown in Remarks Column.

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DISTRIBUTION OF MECHANICAL TRANSPORT

DISTRICT: 21ST CORPS

Unit and Location.	Cycles.		Cars.		Ambulances.	Lorries.						Vans.		Caterpillars.		Waggons Converted.			Drivers, M.T., A.S.C.	Remarks.
	Combination.	Solo.	Ford.	Others.		30-cwt.	3-ton.	Workshop.	Store.	F.W.D.	Various.*	Ford.	Various.	Tractors.	Trucks.	S.A. Buck.	G.S.	Pontoon.		
Position at October 31, 1917:																				
Corps and Divisional H.Q. .	—	—	11	—	—	—	—	—	—	—	—	10	—	—	—	—	—	—	—	
M.T. attached Siege Artillery	—	24	15	—	—	—	—	8	8	—	—	—	—	58	—	22	69	—	—	
Signal Units . . .	—	85	1	—	—	—	—	—	—	—	—	12	—	—	—	—	—	—	—	
Field Ambulances . .	—	12	—	—	51	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Anti-Aircraft Sections. .	—	3	—	—	—	2	—	—	—	—	6 (*a*)	—	—	—	—	—	—	—	—	(*a*) Gun.
Sundry Vehicles. . .	—	9	3	—	—	—	1	5 (*b*)	1	—	—	3	1	2	—	—	—	—	—	(*b*) Includes 4 with Tanks.
Special attachments for Operations . . .	—	—	—	—	—	—	—	—	—	—	—	1	—	1	—	—	3	—	—	
Total . . .	—	133	30	—	51	2	1	13	9	—	6	26	1	61	—	22	72	—	—	
Position at September 19, 1918:																				
Corps and Divisional H.Q. .	—	1	21	10	—	—	—	—	—	—	—	15	—	—	—	—	—	—	—	
M.T. attached Siege Artillery	—	38	25	—	—	—	53	10	10	6	—	2	—	95	44	36	54	21	5 (*c*)	(*c*) Trailers.
Signal Units . . .	—	105	1	1	—	7	1	—	—	—	1 (*d*)	13	1	—	—	—	—	—	—	(*d*) Electric Light.
Field Ambulances . .	—	24	—	—	123	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Anti-Aircraft Sections. .	—	6	6	—	—	18	—	—	—	—	12 (*a*)	20	—	—	—	—	—	—	—	
Sundry Vehicles. . .	—	9	11	—	—	5	2	3	2	—	—	9	—	—	—	—	—	—	—	
Special attachments for Operations . . .	—	20	5	—	—	—	244	4	4	—	—	9	—	12	12	—	8	—	—	
Total . . .	—	203	69	11	123	30	300	17	16	6	13	68	1	107	56	36	62	21	5	
Increase . . .	—	70	39	11	72	28	299	4	7	6	7	42	—	46	56	14	—	21	5	
Decrease . . .	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	10	—	—	

* Type of lorry to be shown in Remarks Column.

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DISTRIBUTION OF MECHANICAL TRANSPORT

DISTRICT: DESERT MOUNTED CORPS

Unit and Location.	Cycles.		Cars.		Ambulances.	Lorries.						Vans.		Caterpillars.		Waggons Converted.			Drivers, A.S.C., M.T.	Remarks.
	Combination.	Solo.	Ford.	Others.		30-cwt.	3-ton.	Workshop.	Store.	F.W.D.	Various.*	Ford.	Various.	Tractors.	Trucks.	S.A. Buck.	G.S.	Pontoon.		
Position at October 31, 1917:																				
Corps, Divl., and Brigade H.Q.	—	—	14	—	—	—	—	—	—	—	—	10	—	—	—	—	—	—	—	
Signal Units . . .	—	118	1	—	—	—	—	—	—	—	—	8	—	—	—	—	—	—	—	
Field Ambulances . .	—	9	—	—	41	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Armoured Batteries and L.C. Patrols	—	15	1	8 (*a*)	—	—	—	1	1	—	—	17	12	—	—	—	—	—	—	(*a*) Armoured.
Anti-Aircraft Sections. .	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Sundry Vehicles. . .	—	2	2	—	—	—	—	1	1	—	—	—	—	—	—	—	—	—	—	
Special attachment for Operations . . .	—	—	—	—	—	—	—	2	2	—	—	6	—	24	43	—	—	—	—	
Total . . .	—	144	18	8	41	—	—	4	4	—	—	41	12	24	43	—	—	—	—	
Position at September 19, 1918:																				
Corps, Divl., and Brigade H.Q.	—	2	44	10	—	—	—	—	—	—	—	22	—	—	—	—	—	—	—	(*b*) Electric Light.
Signal Units . . .	—	172	1	—	—	3	1	—	—	—	1 (*b*)	17	1	—	—	—	—	—	—	(*c*) Does not include Armoured M. Batteries now under G.H.Q.
Field Ambulances . .	—	24	—	—	74	—	—	—	—	—	—	1	—	—	—	—	—	—	—	
Armoured Batteries and L.C. Patrols (*c*) . . .	—	3	—	—	—	—	—	—	—	—	—	12	—	—	—	—	—	—	—	
Anti-Aircraft Sections. .	—	3	3	—	—	15	—	—	—	—	6 (*d*)	4	—	—	—	—	—	—	—	
Sundry Vehicles . .	—	3	10	2	—	2	2	3	3	—	—	9	—	—	—	—	—	—	—	
Special attachments for Operations . . .	—	17	6	3	—	—	233	5	5	—	—	6	—	17	34	—	—	—	—	(*d*) Gun Lorries.
Total . . .	—	224	64	15	74	20	236	8	8	—	1 (*b*) 6 (*d*)	71	1	17	34	—	—	—	—	
Increase . . .	—	80	46	7	33	20	236	4	4	—	7	30	—	—	—	—	—	—	—	
Decrease . . .	—	—	—	—	—	—	—	—	—	—	—	—	11	7	9	—	—	—	—	

* Type of lorry to be shown in Remarks Column.

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CHAPTER XI

WORK OF CERTAIN TYPES—MECHANICAL TRANSPORT UNITS

MOTOR-BOAT COMPANY, R.A.S.C.

1. This Company was formed on the Island of Lemnos between August and September 1915, where it remained until the evacuation of the Gallipoli Peninsula. Many of the boats saw service at Helles, Anzac, and Suvla. In the early months of 1916 it was transferred to Ismailia on the Suez Canal, where the Headquarters remained until July 24, 1918, when it moved to Kantara, in order that its workshops and personnel could be amalgamated with the M.T. Workshops at that place.

2. The Company consisted of 36 boats, in which 17 different makes of engine were installed, namely :

Peerless	(Standard lorry)	For all of which spare parts could usually be obtained from M.T. Depots.
Studebaker	(4- and 6-cyl. car)	
Wolseley	(6-cyl. car and marine)	
Vauxhall	(4-cyl. car)	
Thornycroft	(Standard lorry)	
Kelvin	(4 cyl., 32 h.p.; 4 cyl., 12/16 h.p.; 2 cyl., 15 h.p.)	Standard, but spares were unobtainable in Egypt, and had to be made.
Gleniffer	(2-cyl., 18/22 h.p.)	

and the following obsolete types of engine, which put a very heavy tax on the resources of the workshops : Gray, Fairview, Daimler, Leon Bollet, Germain, Schneider, and J.B.

In addition there were some half-a-dozen out-

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board Evinrude motors, certain spares for which could be obtained by local purchase in Cairo and Alexandria.

Two Wolseley boats and a twin Daimler constituted the three large passenger launches of the Company and gave little trouble.

There were two small boats in which 4-cylinder Studebaker engines were installed, and these proved exceedingly handy.

For rough work the Kelvin engines behaved excellently, and the installation of Peerless and Thornycroft lorry engines in the bigger boats also proved successful.

The Evinrude runabouts were in constant use, especially at Kantara.

In August 1918 two Thornycroft launches fitted with twin 70-h.p. engines came out for the Inland Water Transport, and were attached to the Motor-boat Company, R.A.S.C.

3. The boats were used for the Embarkation Staff and other Port Officers on the Canal and at the ports, and for the carrying of supplies.

They were stationed at Suez, Ismailia, Kantara, Port Said, Alexandria, and later on the Dead Sea, on the Sea of Galilee, and at Haifa and Tripoli.

4. *Personnel.*—The Establishment, which allowed for 4 Officers, 29 Artificers, and 105 Other Ranks, was on a 30 motor-boat basis. The number actually employed varied, as the majority of boats were smaller than the standard size and did not need the crew of three (one coxswain, one engine and one deck hand) allowed by Establishment.

As this was the only motor-boat Company in the R.A.S.C. with the E.E.F., the personnel was changed as little as possible.

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5. *Repair Organisation.*—The workshop consisted of a Thornycroft workshop lorry containing a 20-h.p. Studebaker engine, a 3·5-kw. generator, a 5-inch Drummond lathe, a grinder, an electric drilling machine, and a switch-board for battery charging, and, installed in a 90-feet barge, an 8-h.p. Blackstone oil engine driving a 6-inch Drummond lathe, a milling machine, and a band saw.

A slipway was laid down at Ismailia by the Company's own men. It was 120 feet in length (70 feet in water) and was capable of slipping the largest boat in the Company.

Except for the boats at Alexandria, the whole of the repairs to the Company's boats were carried out at Ismailia, approximately 50 overhauls (i.e. complete repairs to engine and hull) being completed each year. In addition to these complete overhauls and numerous minor repairs, several jobs involving thorough reconstruction and reinstallation were carried out.

The castings needed were made by the Royal Engineers in their workshop at Kantara.

The Douglas 8-h.p. engine which originally drove the generator of the workshop plant became worn out and was condemned. It was replaced by a 20-h.p. Studebaker car engine, that being the only engine available at the time.

The generator speed of 1,850 r.p.m. was too high for this engine, which was therefore geared to it through a Daimler lorry set of timing wheels and chain.

Trouble was experienced with this engine on hot days, owing to insufficient water cooling. The 8-h.p. Douglas engine radiator in conjunction with a 100-gallon tank proved inadequate. The

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difficulty was overcome by making a cooler from 2-inch iron pipe and immersing it in the harbour 2 feet below sea-level, circulation being obtained by a standard pattern Studebaker centrifugal pump.

When installing in a boat a lorry or car engine, which has no crank-case inspection doors, it was found a great advantage to fit the connection rod big-end bolts with heads to bottom and nuts on top. This enabled the rods to be taken out from the top of the crank case after the cylinders had been removed and saved taking the whole engine from its bed when a big-end bearing had run out or needed taking up.

6. *Dead Sea Detachment.*—This detachment consisted at first of two Wolseley launches fitted with 24/30-h.p. engines, a smaller launch fitted with a twin-cylinder Kelvin engine, and three naval whalers equipped with sails and 3½-h.p. Evinrude motors.

Later, a Thornycroft launch fitted with twin 70-h.p. engines was added.

These boats were mounted on specially constructed waggons and sent by train to Jerusalem, and thence by road behind Holt tractors to the Dead Sea.

The density of the water in the Dead Sea reduced the speed of the launches by from 20 per cent. to 30 per cent. according to the part of the sea in which they are working, the water at the southern end being denser than that at the northern.

There is no vegetable or animal growth in Dead Sea water, and consequently the bottoms of the boats never required cleaning.

The boats—the larger of which had machine guns mounted on them—were used for patrolling

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the entire length of the Dead Sea and for reconnoitring for landing-places to enable touch to be made with the troops of the Hedjaz Army. Such places were found by April 1918, and henceforth frequent trips were made with officers and agents of the Intelligence Staff and with stores.

7. Consequent on the advance made north of Jerusalem in September 1918, it was decided to send the large Thornycroft launch and one of the Wolseleys to Lake Tiberias (the Sea of Galilee).

The journey was begun on September 29, and the route taken was via Jerusalem, Nablus, Jenin, and Nazareth. The boats reached Tiberias on October 12, but shortly after they had been launched the rapidity of the advance rendered them unnecessary there, and they were once again taken out of the water and transported to Haifa.

8. The work of moving these boats by road, first from Jerusalem to the Dead Sea, thence to the Sea of Galilee and finally to Haifa, was one of no small difficulty.

The larger boat was 40 feet long and, when mounted on its transport waggon, weighed 21 tons and stood 16 feet from the ground. The route traversed covered much difficult country, including many miles of steep mountain road with numerous hair-pin bends, very ill adapted for a train consisting of two Holt tractors drawing a long and heavily laden waggon.

At many places the sides of the roads had to be built up and culverts strengthened, but all the obstacles were overcome without serious mishap and the boats were successfully launched where they were wanted.

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The Work of a Ford Supply Column in the Western Desert of Egypt

1. *General.*—To anyone who has not actually traversed the Dakla and Baharia district, it is difficult to give an adequate idea of the nature of the tracks to be covered.

They cover some of the roughest going imaginable, and parts of them would be considered impossible for any car.

Generally speaking, the ground is of volcanic origin, and is covered with an abundance of sharp flint stones and boulders. On one occasion no less than twenty-three punctures were made in traversing a distance of less than three miles.

2. Early in 1916 a Ford Van Supply Company worked between the Water Dump "A" (the terminus of the Kharga Oasis Light Railway) and Dakla, a distance of 115 miles. Breakdowns at first were numerous. Cars constantly became stuck and great delay and physical fatigue resulted.

In time, as the men grew more experienced, things improved, and the majority of the drivers learnt to know the right moment for "changing down" and became experts in working the clutch.

When soft sand is encountered, it is important to know exactly when to change down, taking into consideration the speed of the engine and the pace at which the car is travelling at the moment.

3. In 1916 and early in 1917 Ford cars were doing supply and patrol work from the Dakla Oasis to various places where very few white men had ever been—certainly not on motor-cars. The drivers were men who had had over a year's practice on the Baharia Desert and were experts. Day

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after day for eight months, from 7 a.m. to 6.30 p.m., these men drove their cars with but few breakdowns over 115 miles of this impossible country.

In the beginning of 1916 a cyclist made the journey on a Triumph cycle, accomplishing what was then regarded as a marvellous feat of skill and endurance. Early in 1917 there were five Triumph cycles and at least ten men able to do this journey regularly with comparative ease.

One Supply Column ran from Matruh to Siwa to supply the Light Car Patrols stationed there with rations and petrol.

Siwa is 200 miles due south of Matruh, through the Libyan Desert.

This convoy, usually composed of twenty-five cars, left at various intervals.

The time taken on the trip was four days (two out and two in), and the average speed of the convoy was 12 miles per hour, load per car 600 lb., exclusive of driver.

4. One of the chief troubles experienced by Ford Patrol and Supply Columns in this desert was the over-heating of the engine, caused by the evaporation of water from the radiators. Many devices were tried to effect economy in water, and the one finally adopted is described under "Technical.

5. Petrol consumption averaged 12 to 14 miles per gallon, but was improved when an auxiliary air inlet was fitted.

6. *Tyres.*—Outer covers should be either Dunlop grooved or the Goodyear safety pattern.

7. *Spares Carried.*—The spares carried varied with the distance and class of ground to be covered,

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but it was found wise always to carry the following, in addition to the ordinary Ford car tool outfit :

1 Front wheel cover.
1 Rear wheel cover.
2 Spare water joints and clips (2 sizes).
2 Spare plugs.
2 Front-wheel tubes.
2 Rear-wheel tubes.
1 Spare fan belt.
A length of L.T. and H.T. Wire.
1 Vibrator and bridge.
1 Front and 1 rear spring main leaf, and to every four cars one coil unit.
1 Outer and 1 inner ball race.
A couple of ball socket joints.
2 Water joint jackets.
A piece of soap or plaster of Paris often came in useful for patching a punctured radiator.
Stepney wheels were useless for desert work.

8. *Dumps for Spares.*—When running supplies on a regular route, dumps about twenty-five miles apart were made, where a supply of petrol, oil, water, radius rods, front and rear wheels, and front and rear springs was kept.

9. *Repair Shop.*—A repair shop was constructed from tarpaulins and any material that came handy, and in it all sorts of repairs were made.

It was found quicker and better to "replace" Ford parts in this shop by new and to hand the damaged parts to the Base for possible repair.

The Artificer personnel of this Section was two fitters and one carpenter, and their equipment comprised :

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2 Fitter's kits of Ford tools.
1 Carpenter's complete kit.
Emery wheel.
Blow lamp.
Set of stocks and dies.
Small anvil.
Bench vice (50 or 60 lb.).
Crowbar.
Rope and lifting tackle.
Flat and round files.
Valve reamer.
Bearing scrapers.
Breast drill.

10. The work done by the Ford car on the Libyan Desert was really extraordinary, its weight in proportion to its h.p. giving it a pulling capacity that enabled it to get through almost anything.

The Work of a Light Van Company (Ford) in Palestine

1. The Light Van Company in Palestine was first formed at Belah on May 21, 1917, and became 956 M.T. Company, A.S.C., the personnel at that time consisting of 5 Officers, 85 O.R.s, and 54 vans.

2. The work of the Company at that time consisted of the transport of rations and water for local units, and temporarily replacing vans of other units needing repair.

3. From June 25, 1917, the Company, in addition to its transport work, acted as a Depot in the field, as all Ford vans and cars were temporarily withdrawn from units with the exception of two cars and one van per Divisional H.Q.

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4. About this period the vans proved very useful for reconnaissance work.

5. In September 1917 the Company was made up to establishment, viz. Officers 7, O.R.s 159, and 5 Sections of 20 vans each.

6. During the operations in November 1917 a convoy of sixty vans acted as front-line transport, carrying rations for the Imperial Service Cavalry, who were in advance of the Infantry and in touch with the enemy.

The vans were then mostly run in convoys of twenty, and carried mails up and down the line, and rations and fodder to Advanced G.H.Q.

Heavy rains now set in and all transport became very difficult. The lorries to railhead were held up entirely at times, but, it remaining possible to drive, or in places to push, the Fords through the mud, the work of the Company became very heavy. A great deal of damage to vans and breakages of springs resulted from water concealing the depth of shell-holes and ruts on the so-called roads.

7. On January 22, 1918, the Company moved to Ramleh, and thenceforward the greater part of the work was carried out on metalled roads.

Convoy work now practically ceased, owing to the completion of the railway and the addition of more lorry transport, and about forty-five of the Company's vans were attached to various units on special duty in different parts of the country, and were returned to H.Q. from time to time for repairs or replacement.

Twenty vans were detailed for duty with the Military Governor of Jerusalem, and were used principally for carrying grain for the relief of villagers in the district, the remainder of the cars

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with H.Q. being used for daily details and mail carrying.

8. Considering the conditions under which the Ford vans had been running, the results of their work was highly satisfactory.

Many of the vans with this unit were on the road for two and a half years, during which time some of them did service in Africa, the Western Desert of Egypt, and Palestine.

While the Company was working over heavy sand, twin wheels were fitted to the rear wheels of many of the vans. These twin wheels much improved the running of the vans, but the extra strain on the rear axles proved too great, and later better results on the whole were obtained by fitting oversize tyres (31 inches × 4 inches) to single rear wheels.

9. At one time a great shortage of Ford drivers arose, and Class "B" men from the Infantry were sent to this Company to be trained as Ford drivers.

A course of instruction was carefully planned, and the results were very satisfactory, many of the men becoming excellent drivers.

Later a class was started for training Hedjaz troops to drive Ford cars, and some success was obtained, though the work was particularly difficult, as the instruction had to be given through an interpreter who knew little English and nothing about cars.

The Work of Tractor Companies in Palestine

1. The following notes, mainly taken from the history of the work performed by one Tractor Company, are descriptive of the country and the

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difficulties overcome by this form of Mechanical Transport on the Sinai Desert and in Palestine.

2. The Tractor Company selected is 895 Company, as it was engaged on many kinds of work, starting from Kantara in the early stages of the campaign and continuing as far as Ramleh at a later date.

3. A most important work which this Company performed was the carrying of pipes for a pipe-line between Kantara and Rafa.

This work was carried out by a section which consisted of 1 Officer, 1 Sergeant, 15 Drivers, and 6 Artificers, with 6 Holt tractors (75-h.p. type), and 12 Holt caterpillar trucks.

This section arrived in the country on September 23, 1916, and began work in October of the same year.

4. *Description of Country.*—The pipe Kantara–Rafa was to have been laid from Kantara to El Arish, a distance of 155 kilos, but subsequently it was decided to carry it on to Rafa, making a total distance of 202 kilos.

The main features of the country worked over were similar throughout, differing only in degree. The ground was sand of varying depths and softness, broken up by sand-hills, some being mere hillocks, while others were of considerable height and steepness and intersected by gullies and depressions. Here and there a salt lake was found, and when one of these had to be crossed, careful tests were made to ensure that it had a crust sufficiently thick to bear the weight of a tractor and trucks. Boggy ground, which generally had to be avoided by a long detour, was also encountered.

The sandhills, large and small, presented numer-

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ous difficulties. The small hillocks caused the front wheel to rear into the air, and leaky radiator tubes were frequent until the drivers had learned to ease the master clutch and so prevent the wheel crashing to the ground as the tractor surmounted the hillock.

On the larger sandhills, even when hauling only a single truck, the tractors were often stalled, and this occasionally happened also on hummocky ground, or in soft drift sand. To avoid this, tractor and truck were uncoupled, so that the tractor could reach the top of the hill or get clear of a bad piece of ground without the weight of the truck to hold it back.

When the tractor was clear, the truck was coupled up again by means of a wire hawser and towed until it was possible to close-couple again.

5. Experience showed that for all emergencies one long length of hawser did not suffice. For instance, when crossing a low but steep hill, if the hawser was too long the tractor would be descending the farther side before the truck had reached the top, with the result that the hawser fouled the ground. Two 20-foot lengths were found to be most suitable, each being fitted with an eye at either end, large enough to take a 2-inch shackle pin.

When it was necessary to use the full 40 feet, the two lengths could then be shackled together. A hawser of 1-inch diameter was the smallest size of any practical use; the towing chains supplied with the tractors were nothing like strong enough, nor was manila rope, even of large circumference.

The wire hawsers were only procured after a great deal of trouble, and it was necessary to

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approach the Naval Authorities to get the ends properly spliced.

Descending a steep sandhill was also a difficult operation. In the soft sand with the weight of the truck behind it, the tractor could neither be steered nor held with the brake, however carefully this was adjusted.

The right or left friction clutch might be thrown out and the front wheel turned in the desired direction without any effect on the tractor, which continued on as it willed. The only method of changing the course of a machine was to throw a large chock under the disengaged track, thus slewing the tractor round. A wooden chock was carried for this purpose, and many accidents were avoided by its use. (It is recommended that when tractors are used over this kind of country, they should be fitted with separate brakes working direct on the back axles, thereby enabling either track to be held independently. So fitted, much greater control could be obtained over the machine and the difficulty above referred to obviated.)

Occasionally a sandhill was encountered so steep that except by pursuing a zigzag course it was unclimbable, and this sometimes resulted in the tractor slipping sideways down the hill.

To stop this side-slip, the inside friction clutch was thrown out, thus allowing the outside track to dig itself in, making a small bank of sand on the lower side of the slope.

It was frequently necessary to cross and recross the pipe line itself. When this occurred, care was taken to see that a layer of sand was laid down sufficiently thick to prevent the weight of the tractor breaking the pipe.

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6. *Method of Working.*—The pipe line was laid in sections, the pipes coming up on the railway and being dumped off at different places as required.

The pipe line did not conform to the railway, the pipe being laid as straight as possible, while the railway had to circumvent obstacles such as large sandhills and so forth. The pipe dumps were therefore at varying distances from the pipe formation.

The pipes, which were chiefly of 12-inch diameter, varied in length, the average being between 18 and 20 feet, though some were as long as 27 feet, and the caterpillar trucks, fitted by the makers with 2-foot sides, were not well adapted for their carriage. The sides were therefore removed, thus obtaining a flat-topped truck which measured 10 feet 8½ inches in length and 9 inches in breadth. The loading was done by E.L.C. natives, who either lifted the pipes on to the truck or rolled them up poles.

A small crane fitted in front of the tractors would have been of great value for lifting the pipes, and would also have been useful in many other ways.

Nine or ten 12-inch pipes could be loaded on each truck, twenty-three 8-inch or forty-two 6-inch. It was necessary to place the pipes longitudinally, in order that they might be rolled off into the correct position at the pipe formation, and also because if loaded transversely the overhang would have been so great that they would have caught on uneven ground. Furthermore, it would not have been possible to prevent the pipes slipping off the trucks when at an angle on the traverse of a hill.

7. *Best Method of Loading Pipes.*—When circum-

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stances permit, as on level ground, pipes should be loaded transversely, to allow of an equal distribution of weight, as when loaded longitudinally there is a very considerable overhang behind, for owing to the draw-bar being only 4 feet 6 inches long, it was not possible for the pipes to project more than 3 feet in front without fouling the back of the tractor. With a 22-foot pipe the overhang was therefore over 8 feet, which threw too much weight on the rear truck wheels, causing very heavy wear.

A longer draw-bar would not have helped matters, because when crossing sharp gullies or depressions, as the tractor began to climb up the opposite side, the pipes fouled even the shorter draw-bar.

On level ground, however, a longer draw-bar would have been an advantage and would also have facilitated sharper turning. As matters rested, great care had to be exercised on turning in order to prevent the ends of the pipes fouling the back of the tractor.

Extensions to draw-bars were afterwards made and used in laying the pipe line to Jerusalem.

With an 8-foot overhang only one truck could be hauled, but this was not a serious drawback, because the nature of the ground was usually such that the tractors could not pull more than one loaded truck at a time. The second truck was retained with its sides on for the carriage and storage of fuel, etc., for the machine to which it belonged.

To prevent the pipes sliding or rolling off the trucks they were secured at each end of the truck with 2½-inch manila rope, a turn being taken round each pipe, thus holding it individually and

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allowing one at a time to be off-loaded at the formation. It was found that, when off-loading on a slope, if a turn were not taken round each pipe, as soon as the rope was slackened all the pipes would roll off together.

8. *Off-loading.*—On arrival at the pipe formation the tractors drew slowly along the side of the formation without stopping, the pipes being released one by one and rolled off the trucks into the required position.

When the formation was not on a level with the ground over which the tractor was moving, the pipes were rolled down poles into place, the tractor stopping as each pipe was unloaded.

9. As far as tractors were concerned, the pipe laying was completed to Rafa on March 21, 1917, and the section was then detailed to assemble at Rafa for the purpose of carrying supplies and R.E. material to Deir El Belah, preparatory to the first attack on Gaza.

10. *Mishaps.*—The most serious accident which befell the section happened when crossing a bog at Kilo 42/43, near Romani. A narrow road, 8 feet wide, ran through the middle of the bog, which was approximately one square kilo in extent, and as the road seemed practicable, it was decided to make use of it.

The first tractor with two trucks attached came across successfully, but when the second was about half-way and therefore fairly in the middle of the bog, a pin in the left driving-chain broke, causing the tractor to swing suddenly to the left and the left track to leave the road.

The tractor gradually subsided into the bog, until eventually it was to all intents and purposes

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lying on its left side, and only preserved from total submersion by the fact that the right track was still on the road.

If the accident had occurred within a few yards of either end of the bog, it would have been possible to tow the tractor out, but, as things were, assistance could only be rendered from the narrow road.

After many fruitless attempts to get the tractor out bodily, it was decided that the quickest method of salving was to dismantle it, and this, although involving a considerable amount of difficult work in the evil-smelling bog, was successfully accomplished.

Another serious mishap was the breaking of one of the truck-axles. A tractor was hauling two trucks, and the one that broke down was the Store truck. This broken-down truck was towed up on to a small bank below which a hole had previously been dug and into which the second and undamaged truck had been backed.

The broken truck was hauled on to the whole one and securely lashed, and so salved instead of being abandoned to the desert.

On March 26, 1917, the Headquarters were moved to Belah, and thence over Raspberry Hill into the Wadi Guzzi.

11. On April 12, 1917, 895 M.T. Company Headquarters and the remaining Sections arrived at Belah and a variety of work was started. This included the carrying of supplies and R.E. material and the moving of heavy guns.

Many long journeys were made, and the Company was working at full pressure, as only tractors could draw guns or supplies over the soft sand which marks this southern frontier of Palestine.

When tractors came across horses struggling

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with their guns, the animals were unhooked and the guns pulled on to the hard ground; and the same was done with F.W.D. lorries which had dug themselves into the sand.

After the capture of Gaza, the Company worked from Karm, near Beersheba, to Sheria.

12. *Description of Country.*—The country north of the Wadi Guzzi, although soft in places, was no longer desert, but much more like a prairie, being of light sandy soil with occasional steep hills. It was therefore harder and made better running for the tractors; but in dry weather after a few journeys it crumbled to a powder, which, for causing wear on parts, was almost worse than sand, and in wet weather the same ground became a sea of mud.

This type of country extended as far east as Beersheba and up to Sheria and Harira in the north-west, until, approaching the sea-coast north of Gaza, the soil became more and more loamy.

This loamy soil gave very good going in dry weather; in wet weather it was appalling.

13. The tractors next moved up to Latron, via Junction Station, and from there to Ramleh.

14. *Carriage of Supplies.*—For some time continuous trips were made from Ramleh to Sukerier and back with supplies, the machines starting out one day and returning the next. Later the Headquarters were moved to Sukerier, the chain of supplies being continued as before, except that, after the completion of a trip, the machines were allowed one day in camp for cleaning and the necessary adjustments.

At a later date again the Headquarters were moved back to Ramleh.

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When the wet season commenced, the heavy rains and storms practically brought the work to a standstill, the district around Yebna being particularly bad. Both tractors and trucks became absolutely clogged with the stiff clay, and as supply had to be carried on, G.S. waggons were substituted for trucks.

15. *Road Making.*—Early in January the Sukerier–Ramleh run finished and the tractors commenced carrying stone for the making of the Ramleh–Ludd road. It was found that in dry weather on hard ground, such as is encountered in practically all the country north of Gaza, track grousers could be removed without affecting the pulling power of the machine.

Such removal lessened the vibration on the tractors, thereby keeping the machines in better condition and prolonging the life of the more rapidly wearing parts.

16. *The Use of G.S. Waggons and Buck-Waggons in Lieu of Tractor Trucks.*—G.S. waggons were converted and fitted with draw-bars for use as trailers, but they were found unsuited for haulage by tractor, as not more than 1½ tons per waggon could safely be loaded, and not more than three loaded waggons could be hauled by tractor without the risk of pulling the first in half. Used in uneven country, they could not stand the wear and tear, and were soon unfit to take the road.

17. South African buck-waggons were also used in lieu of tractor trucks. As they could each carry from three to four tons, they were a better substitute than G.S. waggons, but not more than two could be conveniently hauled, because on bad roads a greater number would not fall into line.

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They were fitted with sand-tyres, but this made it impossible to use the brake, and consequently they were continually running into one another when going down a hill.

18. *Improved Truck Capacity.*—To increase the carrying capacity of caterpillar trucks, 6-foot extension sides were tried at first; but as this led to overloading, and as the sides soon came to pieces, new extension sides of 2 feet were tried. These sides were held in position by stanchions, bolted on and fitted into cleats on the sides of the trucks, the four corners being fixed by the means of a metal catch.

19. *Wear and Tear on Tractors.*—When working in deep sand which entirely covered the bottom of the tracks up to the truck-wheel greasers, the greatest wear was on the tracks, as they could not be kept oiled.

When the tracks became badly worn, they were changed over with those on the trucks, which, of course, did not wear so rapidly.

This exchange had the disadvantage, however, that the worn tracks off the tractors were very slack for the trucks, and when turning corners, unless great care was exercised, the blank sprocket wheels mounted the tracks and a bent axle resulted, the trucks being of the old type (Nos. C.T/1–C.T/12), with no support for the axles.

The track supporting rollers also became badly worn on account of the dry tracks, and as no spare rollers were available in the country, this rapid wear not having been foreseen, a new pattern roller was devised with brass bushes and a thicker outer surface. These rollers were cast at the M.T. Base Heavy Repair Workshop.

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C.T. trucks require a good deal of attention, especially as regards lubrication. When the crew of a tractor had been out all day, it was impossible for them to attend properly to the oiling and greasing of their tractor and trucks. It was therefore necessary to have a number of men told off for greasing trucks as they came in, and it was found that E.L.C. natives, under the supervision of one capable man, were quite competent to do this work.

These natives were also extremely useful for cleaning down tractors and trucks after a day's run, and when thoroughly and regularly done helped greatly to keep the machines in good order.

Furthermore, natives could be profitably employed in workshops for cleaning purposes and lifting heavy weights, blowing up blacksmiths' fires, and doing many other odd jobs which otherwise would have taken up the time of skilled personnel. Unfortunately, the E.L.C. could seldom spare as many men as could have been employed profitably in these ways.

20. *Speed, Load, and Petrol Consumption.*— Naturally the speed varied according to circumstances, such as the condition of the ground, load to be hauled, etc.

A tractor speed, light, may be put at 3 miles per hour; with one loaded truck, 2½ m.p.h.; and with two heavily loaded trucks, at 2 m.p.h.

The load which can be hauled depends, again, upon the conditions. Generally speaking, if regard is paid to the life of the tractor, it is more economical to haul only one fully loaded truck, but if necessary, in most circumstances two can be hauled.

Experience showed that a load of from 7 to 8

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tons per truck was all that could be carried constantly without detriment to the tractor and trucks.

The maximum load which should be hauled at any time is 16 tons in two trucks.

The petrol consumption may be estimated as follows:

Through Heavy Sand:

Tractor, light	1⅜ gallons per mile.
Tractor, 1 loaded truck	1¾ „ „
Tractor, 2 loaded trucks	2¼ „ „

Over Hard Country:

Tractor, light	1⅛ gallons per mile.
Tractor, 1 loaded truck	1½ „ „
Tractor, 2 loaded trucks	1⅞ „ „

21. *Workshops.*—The workshops supplied were not nearly heavy enough to complete overhauls that had to be carried out in the field.

The workshop personnel was also insufficient, and, to cope with the work arising after the tractors and trucks had been some time in use, it had to be considerably augmented.

The desirability of establishing larger Tractor Workshops in place of the present Mobile Workshops attached to Tractor Companies has been referred to under "Organisation and Administration" (Chapter IX).

Stores in G. 1098 are also dealt with under this heading.

Suggested improvements and designs are dealt with in "Technical Details" (pp. 261 et seq.).

22. It can be taken that the above observations, although taken chiefly from the experience of 895 Company, apply generally to all the tractor companies with this force, whether they were detailed

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for carrying supplies or for the move of guns, except for the added difficulties in the latter case that many gun moves had to be made on moonless nights and over peculiarly difficult country when the Judæan Hills were reached. These hills are steep and rocky, with olive trees and other obstacles, and the places best suited for gun positions were usually very difficult of access for tractors.

The Work of Armoured Cars in Arabia

1. *General.*—The Armoured Car Batteries co-operated successfully with the Hedjaz Army, which worked up from Wejh on the Red Sea through Akaba to Maan, thence northwards following the railway to Damascus.

Cars were first of all landed at Wejh, but were unable to operate owing to the sand. The batteries were then reconstructed and taken to Akaba, where they arrived on November 12, 1917.

2. *Personnel and Equipment.*—A battery consisted of 3 Officers, 23 M.M.G.C., and 25 R.A.S.C., 3 Rolls-Royce armoured cars, and 3 Rolls-Royce tenders.

Talbots were tried as tenders, but proved unreliable.

Early in 1918 the number of vehicles was increased to 4 Rolls-Royce armoured cars, 5 tenders, and 6 box Fords, all of which were quite satisfactory.

3. *Type of Country.*—From Akaba to the Nagb the country is practically desert.

There are some remarkable mud flats near Nadana, some of which are seven to nine miles in extent and over which cars could travel at a very fast speed. In other parts, the country is moun-

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tainous and barren with deep wadis in which there was soft sand. In the neighbourhood of Asrak there are lava fields covered with large black stones.

The cars climbed all the hills except one near Nagb Eshgar, which was a long hill with a rise in parts of one in five, and up this cars were manhandled.

4. *Duties.*—The duties of these batteries consisted in carrying out reconnaissances over long distances, acting as escorts to Hedjaz troops and demolition parties, and operating as a fighting unit against bodies of the enemy. Engagements took place several times with the enemy, chiefly at Tel-el-Sham, Mundawara, and Jerdun.

Many long journeys were undertaken by these batteries; on one occasion one of them, when acting as transport, did two complete journeys from Akaba to Asrak, a distance of 1,200 miles.

The farthest point north reached was Damascus.

5. *Repairs.*—There was no workshop attached and all repairs had to be done by the few fitters who accompanied the cars. Spare parts were carried in the tenders, and once when a car broke down at Asrak a Handley Page flying machine was sent to the Advanced Base M.T. Depot, Ludd, and brought back spare parts.

6. *Loads Carried.*—An armoured car carried:

1 Officer,
2 Gunners and 2 Drivers,
20 boxes of ammunition,
1 box of bombs,
Machine-gun spares,
1 12-gall. fanatis,
2 2-gall. water-cans,
2 2-gall. oil-cans,

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2 or 3 cases of petrol, and
2 or 3 boxes of gold.

The gold was used to pay the Arabs.

A tender carried :

2 Drivers,
2 Gunners (sometimes spare drivers and gunners),
4 15-gall. fanatis,
5 cases of petrol,
4 2-gall. cans of lubricating oil,
Spare tyres,
12 cases of ammunition,
Spare parts,
1 spare gun with tripod, and
from 2 to 5 cases of gold.

7. *Ten-Pounder Section, R.F.A.*—In addition to the ordinary armoured car batteries, a ten-pounder section, R.F.A., also operated in this country.

It consisted of 2 Officers and about 30 Other Ranks, R.F.A., and 12 R.A.S.C. Drivers and Fitters.

The vehicles were 6 Talbot cars fitted with 2 ten-pounder mountain guns and 1 pom-pom.

Except for the difference in personnel and equipment, the experiences of this battery were the same as those of the armoured cars.

Motor Ambulances

1. Motor ambulances in this Force originally belonged either to :

(i) A Motor Ambulance Convoy,
(ii) A Brigade Field Ambulance, or
(iii) Station Transport.

2. (i) There was only one Motor Ambulance Convoy (the 35th M.A.C.), which consisted of 50

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motor ambulances with an R.A.M.C. personnel of 4 Officers, 1 Sergeant, and 17 Rank and File, and an R.A.S.C. personnel of 4 Officers, 1 W.O., 3 Sergeants, 12 Artificers, and 130 Drivers.

It was a Medical Unit and commanded by an R.A.M.C. officer.

It was directed from G.H.Q., and was usually employed in one of the Corps areas evacuating patients from the Clearing to the Stationary Hospitals.

(ii) The M.T. Section of a Brigade Field Ambulance consisted of 7 motor ambulances, 1 Sergeant, 1 Corporal, and 11 Drivers. It was used to help in the evacuation of sick and wounded from the Field Dressing Stations to the Clearing Hospitals. The motor ambulances allotted by War Establishment were of the heavy type, capable of carrying 4 stretcher cases; but as it was impossible in some parts of the country to use heavy ambulances, a certain number of Ford ambulances were allotted to each Field Ambulance on the basis of two Fords to each heavy ambulance replaced. In most cases all motor ambulances with a Division were Fords, which brought the total Divisional strength in ambulances up to 42.

The relative merits of the Motor Ambulance Convoy working direct under G.H.Q. and the Field Ambulance Units with the Brigades were compared after the operations in the latter part of 1917, and the question was taken up with a view to withdrawing the motor ambulances from Field Ambulances and to form more M.A.C.s.

The working of the M.A.C. under G.H.Q. was the more advantageous of the two systems, because:

(i) Parts of Divisions were sometimes only

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engaged in operations, in which case the Field Ambulances of those portions were hopelessly overworked, while the other parts, not actively engaged, had little to do.

(ii) If the motor ambulances had been formed into Motor Ambulance Convoys under the direct control of G.H.Q., it would have been possible to have allotted the work more evenly.

The scheme was, however, opposed by Divisions and Corps and was dropped.

3. *Motor Ambulances on Station Work.*—At the various towns in Egypt there was a miscellaneous collection of ambulances held on the various M.T. Depots' charge, but surplus to establishment, which were used for local medical work.

These ambulances were used for carrying patients between units and hospitals, and for off-loading hospital trains and for loading hospital ships.

As these ambulances were on no establishment, it was a matter of extreme difficulty to find the personnel for this important work, neither was there any basis for the upkeep of equipment.

When the 35th M.A.C. was withdrawn from Alexandria, where it had also been engaged on station work, for service up the line, it was decided to place these ambulances on a proper footing, and authority was obtained for the formation of three Motor Ambulance Transport Companies, R.A.S.C. 1078, 1079, 1080, which were allotted to Alexandria, Cairo, and Kantara.

The work of all the ambulances was as hard as that of M.T. Units.

In the towns where the roads were good, the pressure of work was often very great and the hours of work very long.

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In the field they had to contend with all the difficulties of roads and tracks described in "Operations," Reference No. 8.

For details regarding the types of ambulances used see Chapter XII, pages 245 and 249.

Work of Light Car Patrol

Ford Car Patrols, consisting of 6 Ford cars fitted with Lewis gun, were used:

(*a*) To carry out reconnaissances over areas where strong forces were not likely to be encountered.

(*b*) To provide armed escort for Topographical Survey parties.

(*c*) To search districts and villages.

(*d*) To reconnoitre routes for motor and other traffic of various kinds.

(*e*) To run machine guns into suitable portions of the line of attack. In fact, they were used for any type of work usually undertaken by Cavalry patrols.

The strength of a patrol was 2 Officers, 2 Sergeants, 2 Corporals, and 15 Other Ranks, half of which were drivers and the other half machine gunners, but all drivers were instructed in the use of the machine gun.

After experimenting, a new type of body was adopted by the Light Car Patrol. It had two petrol tanks fitted under the seat.

The gun box was carried on brackets behind the seats, with room under it for tins of petrol on their sides. It was designed to carry the gun with magazine on the post, but covered only the working parts of the gun.

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On loosening the simple catch, the box flew open and the gun instantly became ready for action.

Each car was provided with a single rowlock mounting facing to the back rest of the seat about 1 foot from the near side of the car; from this position it could be fired in any required direction.

Two ammunition boxes (tin, containing eight magazines each) were built into the car under the seat at either end of the petrol tanks, and opening outwards. Water fanatis (five gallons each) were carried on hangers, attached to side members of frame with an angle outwards in such a way that they formed the running boards of the car. These were strengthened and held in place by the rods in the ordinary position, but stronger than the old style. At the rear of the seat was a shallow tray about 6 inches deep. Rations were carried in boxes built into the car. The tray body had an overhang of about 15 inches behind the rear axle, and underneath this overhang was a box, the width of the car, for the accommodation of tubes, tools, and in a central compartment a sealed iron ration for three men. Loads were roped on, and formed a seat for the third man.

The car bodies weighed about 170 lb. complete without the water fanatis, and were about 80 lb. lighter than any of the older types.

They were fitted with a water economiser and equipped with rear wheels (with front-wheel hubs) all round in order that they could all carry over-sized tyres.

The daily allowance of water was on the scale of $\frac{3}{4}$ of a gallon per man and $\frac{1}{4}$ of a gallon for the radiator.

The car without fanatis was equipped for 200

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miles and had ten gallons of water, that is, more than three days' supply for three men.

The following weights give an idea of what these cars carried :

	lb.
Personnel (three men complete with arms, kit, etc.)	600
Rations (three days at 3 lb.)	27
Water (10 gallons)	100
2 fanatis	40
Petrol (for 300 miles—3 cases at 75 lb.)	225
Gun with new box	60
Ammunition (16 mags., 720 rounds)	90
Spare tyres, tools, shovel, pick, and oddments	80
Total	1,222

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CHAPTER XII

THE MECHANICAL TRANSPORT VEHICLES IN THE FORCE

Technical

Three sides of this subject are dealt with:

1. Types and numbers of vehicles employed in the E.E.F.
2. Choice of vehicles, as dictated by variations in climate and country.
3. Defects of vehicles employed and how overcome.

1. The following makes and numbers of vehicles were employed in the E.E.F.:

Lorries

Capacity.	Type.	H.P.	Number.
3 tons	Peerless	35–40	1,071
3 tons	Albion	32	255
3 tons	A.E.C.	40	67
30 cwt.	Daimler	22	169
3 tons	Daimler	35–40	25
3 tons	Thornycroft	40	32
—	F.W.D.	45	28
Other types			56

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Cars and Vans

Type.	Number.
Ford Cars and Vans	1,146
Studebaker	58
Rolls-Royce (used almost exclusively A.C. Brigade)	88
Sunbeam	76
Talbot	22
Vauxhall	88
Wolseley	18
Crossley	28
Daimler	9
Overland	8
Other makes	41

Ambulances

Type.	Number.
Fords	345
Sunbeam	40
Studebaker	37
Talbot	34
Napier	17
Wolseley	18
Cadillac	9
Daimler	5
Other makes	30

Motor-Cycles

Type.	H.P.	Number.
Triumph	4	330
Triumph	8	7
Douglas	2¾	550
Douglas	4	68
Clyno	5–6	19
B.S.A.	.	11
Other makes	.	2

Tractors

Type.	H.P.	Number.
Holt	120	2
Holt	75	286

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Tractor Trucks

Type.	Number.
Holt	173
Clayton	13

Reserve Percentage of Vehicles Considered Desirable.—The following table shows in Column 1 the number of vehicles in use on a given date, Column 2 the percentage under repair on that date, and Column 3 shows the percentage it is considered necessary to hold in reserve to cover those under repair and to form a strategic reserve, the latter being very necessary in a country such as Palestine.

	1.	2.	3.
	Number in Use.	Percentage under Repair.	Percentage required for Emergency Issues and Repair.
Motor-cycles, solo	1,032	13	20
,, combination	47	50	10
Cars, touring, Ford	282	9	20
,, ,, other makes	71	11	15
,, armoured	18	—	10
Vans, Ford	417	5	20
,, other makes	56	½	10
Ambulances, Ford	235	4	15
,, other makes	218	6	15
Lorries, gun	38	—	5
,, 30-cwt.	119	4	15
,, 3-ton	987	8	15
,, Workshop	78	—	3
,, Store	72	—	3
,, Wireless	4	—	—
,, F.W.D.	14	14	20
Caterpillar tractors	252	—	15

2. Vehicles Best Suited to Various Types of Country

(A) *The Western Desert.*—This embraced the Dakla and Baharia Regions forming the Libyan Desert, the surface of which was for the most part fairly hard sand, covered with flinty stones.

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Supply Columns, Patrol and Armoured Car Batteries operated here, and, except for Armoured Car work, the Ford car was the only vehicle found capable of employment.

The box body was the most serviceable for carrying supplies, and for patrol work a special tray body was used. Twin back wheels were fitted to prevent cars sinking into soft sand. The rapid evaporation of water from the radiator proved a difficulty, as water was hard to obtain, so some form of economiser had to be made.

The advantages of the Ford car for desert travel are :

(*a*) Its lightness.
(*b*) Its h.p. compared with its weight.
(*c*) Its high clearance.
(*d*) Its springing system.
(*e*) The quickness with which gears can be changed.
(*f*) Ease with which parts can be changed.

The disadvantages are :

(*a*) The water in radiator boiled too easily.
(*b*) The gravitation feed. This often caused cars to stick on steep dunes.
(*c*) The coil ignition.
(*d*) The weakness of the chassis.

Rolls-Royce.—The Rolls-Royce was the only other car employed, and was used with Armoured Car Batteries. It proved extremely trustworthy and its high h.p. could take it nearly anywhere.

Talbots were tried, but as soon as they got off hard sand proved unreliable.

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(B) *Transport in Towns* —All types of cars were used on local transport work in Cairo and Alexandria.

Both towns have good, wide, metalled roads, the country is flat, and vehicles of any horse-power can be employed.

Peerless (3-ton) and Daimler (3-ton) lorries; Sunbeam, Studebaker, Talbot, Wolseley, and Overland cars; Cadillac, Daimler, Studebaker, and Napier ambulances were the chief makes used.

(C) *Transport in the Sinai Desert.*—Only two types of Mechanical Transport were possible in this desert: Holt tractors and Ford cars.

Both did remarkably good work.

(D) *Transport in Palestine and Syria.*—The lorries used in Supply Columns were 4-ton (American) Peerless and 3-ton Albion.

Peerless.—The Peerless lorries had greater power (35–40 h.p.) and a larger carrying capacity, but as time went on their quality deteriorated, the new vehicles supplied being inferior to those preceding.

Albion.—The Albion lorry had 32 h.p. and a smaller carrying capacity. It gave very little trouble, as the material and workmanship were good throughout. Being a light vehicle, it could get across country where the heavier Peerless stuck.

The Albion gave less trouble in the workshops than the Peerless. Both lorries, however, did extremely good work, and the best practical arrangement would be to employ Peerless in hilly country, where more power is required.

Daimler 3-ton and 30-cwt. lorries were allotted to Signal Units and 30-cwt. Daimler to Anti-Aircraft Batteries. These lorries gave little trouble, but from a service point of view they are not

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recommended, as apart from the greater time taken in overhauling sleeve valves as compared with poppet-valve engines, the former require special lubricants which are not always obtainable in the field. Sand and dust, which covered everything, also added to the difficulty of overhaul, when these machines were taken down in field workshops.

Daimler 30-cwt. lorries were also used in Cyprus, a hilly country with a large number of turns in the narrow (8-foot) roads.

Anti-Aircraft Section used Thornycroft lorries to a small extent, but so few were employed that it is impossible to criticise this vehicle.

Vehicles Used for Hauling Guns.—F.W.D. and Peerless lorries fitted with winding attachment were both used for gun haulage, in addition to Holt caterpillars.

Over stony ground and bad roads the lorries proved better than the tractors, but the latter had no equals over muddy and sandy country. Tractors and lorries were extensively used together, and proved a satisfactory combination.

Ambulances.—Talbots, Sunbeams, Siddeley-Deasy, Napier, Studebaker, and Fords were all used.

The carrying capacity of the Ford was very small, but, like all other Fords, it could go anywhere and proved particularly useful.

Siddeley-Deasy and Studebaker were unsuitable for work in the field, as the former had a very weak back axle and the differential was continually causing trouble, while the Studebaker had many defects and was not built for severe work.

Sunbeams, Talbots, and Napiers all did well.

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Motor-cycles.—The best motor-cycle was the Triumph 4-h.p.

B.S.A. 4-h.p. and Clyno 6-h.p. were also good, but were not much used.

The Douglas 2¾-h.p. and 4-h.p. combination were too weak for work in Palestine.

3. Some Defects in Vehicles, and Methods that have been Used to Overcome Them

A. *Ford Cars*

1. *Defect.*—Springs breaking.

Cure.—The breaks appeared to be chiefly due to the rebound. Check straps, recoil springs, and friction snubbers were fitted. All gave good results, the last being the best.

2. *Defect.*—Cylinders wore quickly—helped, no doubt, by the sand and dust, and this caused the plugs to oil up.

Cure.—The piston-ring grooves were widened by one-third and were fitted with double piston rings, each two-thirds of the standard width, with the openings opposite each other.

3. *Defect.*—The front wheel cup-and-cone ball bearings were very troublesome. They needed frequent adjustment and wore very quickly.

Cure.—Frequent adjustment was the only alleviation possible.

4. *Defect.*—The ignition system was troublesome. When end-play appeared in the crankshaft, the engine became difficult to start owing to the increased air space between the magnets and coils. In wet weather water gathered behind the coil box and caused shorting; in fine weather dust and sand got under the coil points.

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Cure.—A packing behind the coil box helped to keep it dry in wet weather.

5. *Defect.*—The frame side members broke.

Cure.—Good road discipline. Various forms of tie rods were tried, and if made light enough and no holes were cut through the sides of the members they were probably useful; but care had to be taken not to lessen the flexibility of the frame.

6. *Defect.*—The radiators were too small for desert work and for a hot climate in a hilly district.

Cure.—Various forms of water economisers and additions to the water in circulation were used successfully.

7. *Defect.*—It was trying to the driver to have to hold the pedal down when long stretches had to be run in low gear as in desert work.

Cure.—An arrangement was fitted which held the pedal down when required.

8. *Defect.*—The rear wheel hubs fractured at the neck.

Cure.—Maintaining the clutch adjustment on the light side. Fractured hubs were repaired in the mobile workshops.

B. 40-*h.p. Peerless Lorry* (4-*ton type*)

1. *Defect.*—The fan was stamped out and gave way where the ring was fixed to the blades. Also the fan bracket anchorage was too small and excessive vibration took place.

Cure.—Little was done in the field. A guard opposite the blade tips on the inside of the radiator consisting of a flat annular ring about 3 inches wide made of unserviceable petrol tins was found useful.

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2. *Defect.*—The fixing of the gudgeon pins by grub screws was very primitive. The screws ran back and allowed the pins to score the cylinder walls.

Cure.—Several improved fixings were used. The simplest was to fit a longer grub screw drilled for a split pin inside the gudgeon pin. When there is a grub screw at each end of the pin, a steel wire can be passed up the hollow pin through the holes in the screws.

3. *Defect.*—The mechanical oil pump plunger seized and sheared the skew gear.

Cure.—This was due to the eccentric driving spindle binding against the plunger when the engine heated up, and the defect was cured by giving the spindle more clearance.

4. *Defect.*—The fixing of the engine bearers to the frame was very poor.

Cure.—No alterations were tried, but it is suggested that heavier fitted bolts with the nuts on the outside where they can be tightened easily would be better than the small cup-head bolts with the nuts inside as now fitted.

5. *Defect.*—The right-hand side frame member broke in almost every case where the steering box is fitted to the member.

Cure.—The frame was strengthened with *carefully fitted* flitch and wrapper plates.

6. *Defect.*—The cylinders cracked across the crowns. In most cases this was caused by the metal being of uneven thickness, due to the cores having been badly placed or having moved.

Cure.—There is none.

7. *Defect.*—The fixing of the steering drop arm to the steering sector was bad in design and badly fitted.

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Cure.—The two parts were fitted accurately together and the holding nut was kept tight.

8. *Defect.*—The suspension of the gear box is faulty.

Cure.—Where tubes were not fitted between the flanges of the cross member and over the holding-up bolts, they were inserted, and the bolts were tightened up frequently.

9. *Defect.*—The lubrication of the radius rod bushes was bad, the greasers being on the no-pressure sides.

Cure.—Greasers were added to force grease in on the pressure sides.

10. *Defect.*—The fixing of the foot-brake drums is weak and they worked along the sprocket shaft.

Cure.—None, except to watch and tighten up.

11. *Defect.*—The lubrication of the clutch centre bush is bad.

Cure.—Nothing was tried. Careful superintending was the only thing that was done.

12. *Defect.*—The method of fixing the fan driving pulley on the main shaft is poor.

Cure.—Nothing was tried.

13. *Defect.*—The method of fixing the radiator stay rod to the dashboard is very poor.

Cure.—A fair-sized plate was fixed on each side of the dashboard where the rod passed through it.

14. *Defect.*—The steering box worked loose on the frame.

Cure.—A stay from the top of the box to the cross member of the frame was fitted.

15. *Defect.*—No clutch stop was provided.

Cure.—A clutch stop was fitted, as this helped to make gear changing easier.

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16. *Defect.*—Oil leaked from both ends of the crankcase, from the back end especially.

Cure.—Nothing was tried.

17. *Defect.*—There was rather too much end play in the crankshaft.

Cure.—Nothing was tried.

18. *Defect.*—In many of the newer lorries the universal joint yoke was loose on the shaft.

Cure.—This was due to bad fitting, and no effective cure was found.

19. *Defect.*—The breather on the gear box choked easily and it was difficult to prevent oil leaking from the gear box.

Cure.—The leakage was very much lessened by removing the breather and fitting a bent vent pipe.

20. *Defect.*—The speed selector rods worked on the slide threads, which not infrequently stripped.

Cure.—Lock nuts were fitted on the selector side ends. There was not much room for this, but it was done and the trouble was eased.

21. *Defect.*—Wooden wheels are not suitable for this climate. They shrink until the rims come off.

Cure.—Steel wheels. For a shrunk wooden wheel the rim was pressed on again with sacking packing under it. The method proved successful.

22. *Defect.*—The steering side rod was below the front axle and much too near the ground. This proved to be a serious defect on really bad roads.

Cure.—None, except alteration of design.

23. *Defect.*—The foot-brake anchorage scored the brake drum.

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Cure.—The anchorage was lifted clear of the drum by inserting a piece of fibre.

C. 32-*h.p.* *Albion* (3-*ton type*)

1. *Defect.*—The cross tubes fractured where welded to the carrying brackets. When the tubes were brazed to the brackets they rarely fractured.

Cure.—A steel tube was turned down to a tight fit and driven into the cross tube, pinned and brazed.

2. *Defect.*—The front sprung U-bolts sheared at the spring seat.

Cure.—The U-bolts were replaced by bolts and plates.

3. *Defect.*—The gear box carrying brackets fractured where fixed to the cross tubes.

Cure.—Forged brackets were made and fitted.

4. *Defect.*—The steering barrel springs broke.

Cure.—They were replaced by rubber buffers cut from old solid tyres.

5. *Defect.*—The water pump drive was not good.

Cure.—Nothing was done except to watch the belt tension.

6. *Defect.*—In a number of cases a case hardening broke away from the driving bevel pinion.

Cure.—None.

7. *Defect.*—In some cases the second speed pinion fractured at the key way, or the key worked loose in the shaft key way or sheared off.

Cure.—Drivers were instructed not to change up too early, and starting on second gear was not allowed.

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8. *Defect.*—One company in particular had a number of cases of the side frame members bending.

Cure.—The fitting of Peerless lorry tie rods was found to be satisfactory, but good road discipline and care in loading also effected a cure.

D. *Daimler 30-cwt. and 3-ton Lorries*

The only outstanding defect noted was that the front engine suspension bolts sheared in the 30-cwt. C.B. type.

E. *F.W.D. (Model B) 3-ton Chassis*

The following were the chief defects :

(*a*) The pressed steel brackets connecting the side members with the longitudinal members of the sub-frame was too weak and the rivets worked loose.

(*b*) The side members of the frame twisted.

(*c*) The type of oil groove in the connecting-rod bearings resulted in ridges being formed on the crank pins.

(*d*) The filter on the oil pump suction was too small and blocked up quickly.

(*e*) The female portion of the axle end drive shaft universal joint wore badly and in time the shaft end turned in it.

(*f*) The springs broke at the kink formed in them for locating the position of the U-bolts.

(*g*) The lever arm actuating the rear brakes was too short.

(*h*) The wheel track was so narrow that when travelling along the side of a hill the lorry was apt to be top-heavy when the body was on.

(*i*) The wheels were too narrow for work in sand.

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F. 12/16 *and* 16/20 *Sunbeam Cars*

The following were the chief defects:

(*a*) The spring clips were too weak.

(*b*) Splash lubrication is preferable to forced.

(*c*) The camshaft driving chain should have some means of adjustment provided, or, better still, be replaced by gear wheels.

(*d*) *Wheels.*—Sankey steel wheels are much better in a hot climate than wooden wheels.

Larger ball bearings should be used in the front wheels.

The locking pin in the detachable wheel hub should be stronger and a finer adjustment provided to enable the wheel to be locked tight. The wheel driving studs wear badly.

(*e*) *Clutch.*—Fabric answers better than leather on the clutch. The ball-thrust bearing in the clutch withdrawal wears quickly.

The spigot bearing in the clutch is too small and cracks. It is the worst bearing in the car. There is no room to improve it without an alteration in design.

(*f*) The differential casing strains rather easily by twisting.

(*g*) The petrol pressure system is defective.

G. 25-*h.p. Vauxhall*

Defects noted were:

(*a*) The valves burnt and the cylinders cracked at the valve seats.

A water circulating pipe taken from the valve pockets to the radiator helped to cure these defects. Open tappet setting was necessary.

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(*b*) Splash lubrication would be better than forced.

(*c*) The dumb irons set in, and they would be strengthened by the fitting of a distancing rod.

(*d*) Owing to the amount of twisting of the chassis that results from the ground that has to be travelled over, the four-point suspension of the engine is bad, Shearing of the front suspension bolts was common and cases of the engine lugs breaking off occurred.

(*e*) The White & Poppe carburettor is not satisfactory for war purposes. Its adjustment is delicate and it wore quickly. A Zenith carburettor would be better.

(*f*) The petrol pressure system gave a good deal of trouble.

(*g*) The rear universal joint was too small.

(*h*) The standardising of the parts is imperfectly carried out, and a considerable amount of fitting was nearly always necessary when new parts were inserted.

H. *Siddeley-Deasy Ambulances*

1. These have been found untrustworthy vehicles.
2. Their defects are :
   (*a*) The differential was a constant source of trouble. A newer design was received later from England; and appeared to be better, but was not severely tried.
   (*b*) The side and the rear cross members of the frame bent and cracked.
   (*c*) The rear spring hanger brackets bent outwards.
   (*d*) The rear spring slides wore very badly.

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They should be detachable and easily replaceable.

(*e*) The standardisation of parts is badly carried out, and a great amount of fitting was usually required when new parts had to be inserted.

I. *Studebaker Cars*

1. Studebaker cars are not suitable for the severe conditions of military use.

2. Their defects are :

(*a*) The four-cylinder engine cannot be kept tight on the chassis, presumably because it is out of balance.

(*b*) The ignition system gave trouble; the switches, for example, are very poor.

(*c*) The gear box is bad, especially the second speed gear.

(*d*) The long unsupported selector rods gave trouble.

(*e*) The rear axle casing was too weak.

(*f*) The rear axle drive shafts frequently failed.

(*g*) The chassis side members bent and broke.

(*h*) The brakes were bad.

J. *Triumph 4-h.p. Motor-Cycle*

1. Frames broke at the head.

2. The front fork springs broke very frequently and this part of the bicycle needs redesigning. An efficient substitute for this spring was made from rubber discs cut from old inner tubes.

3. The general design of the gear box would be

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hard to improve upon, but it was too weak and should be strengthened all round.

K. *Douglas* 2¾-*h.p. Motor-Cycle*

1. This machine was proved to be too weak for active service conditions in Palestine.

4-*h.p. Combination*

1. This machine was also not powerful enough for active service conditions in Palestine.
2. The gear box needs to be stronger all round.
3. The cork discs on the clutch were unsatisfactory; but this difficulty was overcome by inserting a ring of ferodo on each side of the plate instead of the corks. The clutch withdrawal needs to be much stronger.
4. The frame and the side-car chassis were too weak.
5. The 3-ply wood side-cars proved to be very unserviceable.
6. The ground clearance was insufficient.

L. *B.S.A.* 4-*h.p. Motor-Cycle*

1. This has proved to be a very serviceable machine with a strong and trustworthy frame.
2. A number of cylinders cracked at the valve seating; otherwise the engine gave no trouble.
3. The gear box was quite satisfactory, but the clutch was much too small for heavy work.
4. A Triumph or a B. & B. carburettor was a great improvement.
5. A foot-operated gear change would be an improvement.

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M. *Clyno 5/6-h.p. Motor-Cycle*

This machine developed few faults and proved an excellent machine for heavy passenger service.

N. *75-h.p. Holt Tractor*

1. *Defect.*—The first motion chains spread and caused the ends of the bushings to break.

Cure.—The split pins were replaced by $\frac{5}{16}$th-inch keeper pins of mild steel.

2. *Defect.*—The roller frame channel brace broke.

Cure.—Fish plates were fitted.

3. *Defect.*—The roller frame core springs broke through falling out of position when travelling over uneven ground.

Cure.—Stop bolts were fitted between the main frame cross member and the roller frame gudgeon plate.

4. *Defect.*—The track roller gudgeon wore loose in the gudgeon plate.

Cure.—The gudgeon plate was hammered up to fit the pins and a strengthening plate was fitted on to the side of the gudgeon plate.

5. *Defect.*—The engine frequently oiled up the sparking plugs.

Cure.—The top oil ring was formed into a scraping ring, six $\frac{5}{32}$nd-inch holes being drilled diagonally through into the inside of the piston. The bottom end of the piston skirt was turned so as to form a knife edge.

6. *Defect.*—The track and support rollers were insufficiently lubricated.

Cure.—The grease cups were replaced by screwed plugs and grease was forced in with a gun.

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O. *Suggested Improvements in Design and Construction of Holt 75-h.p. Tractors*

1. Special lug cast on front end of crank case to ensure a more rigid and effective way of fixing fan bracket.

2. A more efficient form of drive for the water pump and fan, preferably the pump being driven positively from the engine.

3. Magneto gear of the same width across the teeth as the camshaft gear.

4. Water tank situated farther away from the crankcase so as to permit the use of the crankcase inspection doors on right-hand side. This is essential when taking up engine bearings.

5. More castellations be made in the master clutch container ring and the brass plates made a better fit.

6. Front end of the bevel pinion shaft supported by a bearing in the gear case.

7. Centre bearing brought nearer to the bevel pinion.

8. Master clutch shaft bearing and spur gear bearing fitted with an impelling device to prevent oil leakage.

9. All gear-case bearings be situated inside the gear-case covers, so as to render an oil-tight joint between the gear case and the cover more practicable.

10. A more efficient means of lubricating the 28-tooth bevel and 27-tooth spur gear bushes.

11. All ball-thrust races substituted by plain phosphor bronze washers.

12. Bevel gear supporting roller mounted on a bigger bearing and the bracket strengthened.

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13. Friction clutches replaced by single plate type clutches so as to dispense with the accurate adjustments now necessary.

14. A means of adjusting the tension of the first motion chains, and block type chain substituted by roller type.

15. The centre truss-bearing abolished and the track drive and first motion chain sprockets coupled together each side and allowed to float on a solid shaft, the coupling between each set of sprockets being used as a bearing, the ends of the shaft being supported by a fixing from the main frame member.

16. A more efficient type of brake of such a design that it would hold in either direction.

17. Auxiliary brakes fitted to each track and to work independently, so as to assist in steering the vehicle.

18. Either twin tracks used or the present tracks made wider, so as to support the tracks used when travelling over rough ground. This would lessen the chances of the track jumping the track wheels, which is a very common occurrence and often leads to considerable damage.

19. The track-drive sprocket and blank sprocket made with flanges so that they ride on the face of the links and not on the space blocks. This would considerably lessen the vibration and noise of the vehicle.

20. The face of the track links to be made a quarter of an inch thicker, so that after wear the flanges of the rollers do not ride on track pin heads.

21. Five track supporting rollers used instead of three.

22. Inside front thrust rods made more accessible.

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23. Main frame cross members and roller frame channel braces made of heavier section channel and with heavier fish plates.

24. Roller frame coil springs substituted by electrical springs on swivel mountings

25. A more suitable method of fixing the truck roller gudgeons into gudgeon plates.

26. Front end of the top angle iron-frame member more securely fixed to main frame members.

27. A winding drum or bollard fitted on each vehicle.

28. Rear drawbar assembly made in the form of a cup to facilitate coupling up to trucks.

P. *Holt* 10-*ton Caterpillar Truck*

1. *Defect.*—The track frequently came off the rollers and blank sprockets when turning or travelling over rough country, which caused the blank sprocket shaft to bend.

Cure.—The inner and outer blank sprocket shaft bearings were faced down, so as to allow the blank sprocket a floating movement of $\frac{3}{4}$ inch. This allowed the sprocket to give to the spring of the track when turning.

2. *Defect.*—The blank sprocket bushings wore excessively through not being able to hold a reserve of grease.

Cure.—The bushings were cut into three equal sections and a section was inserted into each end of the blank sprocket. This left a pocket for grease between the end of the two sections.

3. *Defect.*—The blank sprocket shaft wore excessively.

Cure.—The shaft was locked in its bearings so as to bring the wear on one side only. When worn,

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the shaft was then turned round so as to bring the wear on the unworn side.

4. *Defect.*—Tracks became locked by mud packing in between the cross channels and the track plates.

Cure.—Scrapers were fitted on the rear of truck from the main-frame members to the outside frame member.

5. *Defect.*—The blank sprocket dust washer cut into the shaft.

Cure.—The washers were softened and the shoulders were turned off to allow it to fit close up to the boss of the blank sprocket. (This helped to obtain the $\frac{3}{4}$ inch float movement required to overcome Defect 1.)

6. *Defect.*—The track and support rollers were insufficiently lubricated.

Cure.—The grease cups were replaced by screwed plugs and grease was forced in with a gun.

Suggested Improvements in Design and Construction of Holt 10-ton Tractor Trucks

1. Independent adjustment for each track.
2. Roller bearing substituted for plain bushes in the blank sprocket.
3. Inner and outer gudgeon plates extended so as to form mountings for the blank sprocket bearings.
4. Five track supporting rollers used instead of two.
5. Blank sprockets made with flanges so that they ride on the face of the links and not on the space blocks.
6. Either twin tracks or the present tracks made

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wider so as to support the track shoes when travelling over rough ground.

7. Face of track links made a quarter of an inch thicker, so that after wear the flanges of the rollers do not ride on track pin-heads.

8. A bigger oil tank fitted for the track oiling system.

9. Mud scrapers fitted to prevent mud packing between the floor boards and the track shoes.

10. Supporting springs fitted to the drawbar to facilitate coupling up to the tractor.

11. Detachable extensions fitted to the truck sides for carrying bulky loads. Total length of the side from the extension to the floor of truck about 4 feet.

12. Rear drawbar assembly made in the form of a cup to facilitate coupling up to another truck.

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CHAPTER XIII

ORGANISATION, ADMINISTRATION, AND WORKING OF MECHANICAL TRANSPORT STORES BRANCH IN E.E.F.

1. In 1915 there was one M.T. Store (the Base M.T. Depot Stores) for the whole of the E.E.F.

Later Advanced Base Sub-depot Stores were opened at Cairo, Ismailia, and Kantara, the one at Ismailia being moved forward first to Rafa and then to Ludd.

The Base M.T. Stores supply all the vehicles in the Force, either directly when the demands are made from Alexandria and District, or through Advanced B.M.T. Sub-depots.

The subsidiary depots at Cairo and Kantara supplied the units located in their immediate area, but the depot at Ludd supplied all the units engaged in the actual theatre of operations.

2. The two chief difficulties which all stores had to face were :

(i) Anticipation of requirements of units.

(ii) The obtaining of stocks to meet these requirements.

As requirements largely depended on the tactical situation, and plans of operations could not always be disclosed, great difficulty was experienced in foreseeing them.

As the delivery of supplies from Home Depot seldom took less than four months from the time

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of ordering, this difficulty was still further increased, and possible loss at sea by enemy action had also to be taken into consideration. Furthermore, not only had operations themselves to be reckoned with, but at times the advances made by our troops were so rapid that entirely different roads and climatic conditions were encountered, which caused excessive wear of particular parts, such as tyres, chains, etc. The heat from the desert around Gaza, for instance, caused wheels to shrink, whilst hilly country and bad road surface around Jerusalem, combined with the wet winter, wore out the tyres.

On the run from Beersheba via Hebron to Jerusalem and back, a distance of 112 miles, it was no uncommon event to have a set of solid tyres completely destroyed; but when the roads were properly relaid, the demand for tyres grew relatively smaller.

3. *Local Resources.*—Very few actual spare parts, tyres, etc., were to be found in Egypt, but the manufacture of stores was carried out by local workshops to help to meet the demands made on the Base M.T. Stores.

The workshops of the E.S.R. were by far the most useful of any in Egypt. Many thousands of parts were manufactured by them, ranging from Triumph connecting-rod rollers, weighing a few grains, to tyre moulds weighing over a quarter of a ton. They also made a number of spare parts for a miscellaneous collection of old ambulances and cars, and successfully manufactured road springs, Holt space blocks and track pins, Ford radius rods and brake blocks and rendered useful service in gear cutting.

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The makes of vehicles mostly concerned were Holt tractors, Peerless lorries, Ford cars, and Triumph motor-cycles.

At the beginning of the War the E.S.R. made all parts with their own material; but when the Ministry of Munitions in England would not allow material used to be replaced, the Army had to find supplies.

The great disadvantage of this was that as the material furnished by the Army was obtained from various sources and was for the most part of an unknown quality, it was often difficult to tell before manufacture and trial whether it was suitable.

The manufacture of small steel motor-cycle parts was the work on which the E.S.R. proved least successful, because they had no machine capable of grinding them.

The Egyptian Dredging Company also undertook work.

Fifty Peerless radiators were made by them and turned out very well.

The Egyptian Rubber Company manufactured many hundred feet of radiator hose and rubber tubing, the quality of which was very good, in fact much superior to that supplied by Home Depot. They also made lorry tyres.

Other firms which carried out machine work, castings, and forgings were the American Engineering Works, the Khedival Mail Steamship Company, Messrs. Cook & Sons, and Hassabal & Company. Messrs. Allen Alderson & Company supplied engine stores, rope, etc.

4. *Shipping* (*Vehicles and Stores*).—Considering the number of stores received in the country, the

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percentage of breakages and damage due to bad packing and storage was very low.

The boxes containing spare parts were strong enough for the purpose.

The Naval Transport Staff suggested that all vehicles should be stripped of running boards, guards, etc., before being placed in their hands for loading purposes.

The actual storage and discharge of shipping was entirely in the hands of the Naval Authorities, who provided special foremen and special slings with stretchers for the handling of M.T. vehicles.

An A.S.C., M.T., Officer was always present when vehicles were being off-loaded; and although he had nothing to do but watch proceedings, the Naval Authorities were always glad to have him there.

The chief losses in stores was sustained by the sinking of the H.M.T. *Camerata*, on which there were 687 cases, worth approximately £60,000, but 80 per cent. of these spares were reclaimed, and made serviceable by the Salvage Section of the M.T. Stores.

Three hundred and four cases went down on the H.M.T. *Titian* and 172 were lost on the H.M.T. *Waterfels*. These cases principally contained Ford and Triumph spares.

The Base M.T. Stores

1. The Base M.T. Stores arrived in Egypt as part of the Base M.T. Depot in April 1915, but, owing to the inadequate accommodation at Mustapha, Alexandria, where the Base M.T. Depot was situated, accommodation was provided in permanent buildings at Gabbari, about half a mile from Alexandria main-line goods station and about

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one mile from the docks. The buildings were well suited for the purpose, and the position was extremely good from the transport point of view.

2. At first it provided for 945 lorries, 830 cars and ambulances, 527 motor-cycles, and 8 tractors, a total of 2,310 motor vehicles, and by December 31, 1918, it was providing for a total of 5,908, comprised of:

1,746 Lorries	27	Types.
2,119 Cars and ambulances . .	51	,,
288 Tractors	1	,,
1,569 Motor-cycles	9	,,
186 Tractor trucks. . . .	2	,,

These figures also show the number of sections of stores it was necessary to maintain for the various makes and types.

3. The Base M.T. Stores, as already stated, were moved to permanent buildings at Gabbari; and at a later date, on its arrival from England, the Heavy Repair Workshop shared this accommodation.

These two units became more and more closely allied, and in the end practically formed one unit.

In August 1918, owing to their difference in function, it was decided to separate the Base M.T. Stores from the B.M.T. Depot, and since that date the Stores have formed a distinct command; but discipline, rations, pay, etc., were dealt with by Base M.T. Repair Shops (644 Company).

4. *Organisation.*—The Stores were divided up into sections and departments.

Each make of vehicle had its section, and there were other sections for tyres and accessories.

A storeman was in charge of each section, and

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his duties were to receive stores, place them in their respective bins, and enter up the receipts and issues on the tally card.

Tally cards were always placed on the bins, and a check of stock in hand could therefore be made at any time.

The departments, each under an officer, were :

(i) The Receipt and Issue Department.
(ii) The Provision Department.
(iii) Demands.
(iv) Central Office.

The whole was controlled by the O. i/c. B.M.T. Stores.

Personnel.—The strength of the Stores was :

Major	1
Captain	1
Subalterns	2
W.O.	1
Staff-Sergeant	1
Corporal Storeman.	4
Storemen (included 14 civilians)	32
Fitters	8
Drivers.	12
Body builders	2

Supply Details

W.O.	1
Staff-Sergeants and Sergeants	4
Corporals	5
Packers	5
Privates (included 28 civilian clerks)	89

These numbers were found sufficient to cope with the work. (For diagram showing distribution of personnel, see Appendix I.)

The O.C. was responsible for the organisation, administration, and accountancy of the Stores, and further, for the upkeep of stores to meet the requirements of M.T. vehicles and workshops in the E.E.F.

He controlled the stocks held throughout the Force, and laid down the general principles on

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which the Base M.T. Sub-depot Stores were to be administered.

He also paid periodical visits to various M.T. units in the Field, thereby gaining useful information about the general condition of vehicles, the weak points of various makes, and the wear of particular parts. This information assisted him in making fairly accurate estimates as to future demands.

5. *System of Accounting.*—At first the ledger system of accounting was used, but it was soon found impossible to work on this method, owing to the great number of parts that had to be stocked for the various makes and types of vehicles in use.

In March 1916 a card system was introduced and was an improvement on the ledger system, but in many details it was found to be unsuitable and was superseded in August 1916 by another card system, which, from the accounting side and for accurate working of receipts, demands, issues, and stock-keeping, was found to be quite satisfactory. This card system is explained below. (All forms used are shown in red numbers and specimens are attached.)

6. *The Method of Receiving and Despatching Stores. Receipt of Stores from Home M.T. Depot.*—On arrival of ships carrying M.T. spares at Alexandria, the cases, bundles, etc., were off-loaded on the quay and brought to the Base M.T. Stores by mechanical or horse transport.

A complete list of cases was made out, showing a reference number and the section of the Stores for which the spares, etc., were ordered. All damaged cases were noted by number and B/L endorsed accordingly.

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The Bill of Lading, Army Form G. 964 (1), was then signed by the Officer-in-Charge of the R. & I. Department and handed to the E.S.O.

7. *Unpacking.*—The cases having arrived in the various sections, a receipt was given by the respective storemen to the Officer-in-Charge of the Receipt and Issue Department (R. & I.).

Parcels were now unpacked and their contents checked by the *Packing Note* (2), after which the various stores were placed in their proper bins and taken on charge on the *Tally Card* (3), which was dated and certified correct by the storeman.

The *Packing Note* (2) was given a Receipt Voucher (R.V.) number, and was then passed to the *Ledger Card* (4) clerk, who took the spares on charge.

This clerk passed the *Packing Note* (2) on to the clerk responsible for *Order Cards* (5), who took the spares on charge, and at the same time marked the receipt against the copy of the order on Home M.T. Depot.

The *Packing Note* (2) was next passed to the Records Department for comparison with the vouchers received by mail from Home M.T. Depot. If found to be correct, the duplicate voucher (6) was signed by the Officer-in-Charge of the section and returned to the Home M.T. Depot.

The original voucher (7) with the *Packing Note* (2) attached was now filed away in numerical order, according to the R.V. number.

8. *Discrepancies.*—Any discrepancies found by the storeman on unpacking were noted on a slip of paper and attached to the *Packing Note* (2), and on receipt by the Record Department a *Discrepancy Report* (8) was made out and forwarded to Home M.T. Depot attached to the duplicate receipt

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voucher, which in this case was signed O. i/c. Section, " Subject to Discrepancy Report No. (9)."

9. *Demands from Units, and how dealt with.*— Indents from units were received in duplicate on Army Form W. 3338 (9); but if this form was not obtainable, *A.Fs.* 994 or 997 were accepted. The indent on receipt was registered in the *Post Book* (10), and the following details were also entered:

Units' indent numbers.
Date.
Date received.
Number of items.
Date passed to section.
Section of Stores Demand.
Date of return to unit (if necessary for further particulars).
Date returned.
Signature of receipt in Section and time of day received.

10. The indent was then given a post-book number, which became the main reference number for all future action. The indent, after it had been scrutinised by the O. i/c. Indents, who had a special staff of N.C.O.s to correct nomenclatures, revise and cancel if found necessary, was passed to a section clerk, who made out an *Action Taken Sheet* (11) in duplicate.

One copy of the Action Taken Sheet and one copy of the indent were then passed to Section Storeman. The other copy of the indent was kept in the central office.

11. On receiving the copy of the indent attached to the copy of the Action Taken Sheet, the storeman made the required issue, entered it on his *Tally Card* (3), and made out a P.N.I.V. in quadruplicate

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(12). One copy of this became the packing note, two copies were sent by post to the consignee (one of which he returned receipted), and the remaining copy was retained in the book.

On the Action Taken Sheet (11) the storeman entered the quantity issued, quantity outstanding, the reason for non-issue, P.N.I.V. number, date, and stock after issue.

He next passed the copy of the Action Taken Statement to a ledger clerk, who, after entering issues and outstandings on his card (4), checked remaining stock.

The Action Taken Sheet and Indent were now passed on to the order card clerk, who again entered the issues and outstandings on his card (5).

It will thus be seen that by the use of the Action Taken Sheet the stock was checked three times at every issue by the comparing of the Tally Ledger and Order Cards with the Stock "after issue" column.

12. *Outstandings.*—On receipt of the consignment from Home M.T. Depot, the storeman's first duty after taking the goods on charge was to issue to units the spares that were outstanding.

Outstandings were shown on his tally card, by the post-book number and by the Action Taken Sheet, which was kept by him with a copy of the unit's indent attached.

By this means no delay occurred in the despatching of spares for which units were waiting, and in most cases the spares were on rail to the units shortly after the ship had been off-loaded.

13. *Issues.*—Spares were collected from the sections by a collector of the R. & I. Department, who, after checking, took them to the packing

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portion of the Receipts and Issues Department, giving a signature to the section storekeeper for them on the written copy of the R. & I. voucher, which was then passed to Records for retention until the receipted copy was received from the consignee.

14. *Packing of Stores.*—All spares, power units, etc., were packed in wooden cases, special attention being paid to ensure the safe transit of fragile goods, such as windscreens, accumulators, lamps, etc. etc.

Outer covers were packed in bundles, ranging from three to six covers to the bundle according to size.

Springs, spring leaves, etc., were despatched loose, with all vital parts protected by a wrapping of hessian.

Addressing.—All cases, bundles, and wrappings were marked with the name and address of the consignee and also with that of the consignor for return in case of non-delivery.

Vehicles.—Lorries, light cars, etc., were collected from the Heavy Repair Workshops, and a receipt was given for these by the O. i/c. R. & I. Department, on special collection forms. They were then loaded up on the railway's flat trucks. All accessories, such as lamps, horns, tools, etc., were packed in a case, which accompanied the vehicles.

Cycles.—New cycles were packed in crates; all accessories, kit, and spares were packed in sealed cases, enclosed within the crate.

Part-worn Cycles.—These cycles were despatched loose, but all vital parts were protected by a wrapping, and accessories, spare kit, tools, etc., were packed in cases.

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15. *Despatch of Stores.*—Stores going by goods train were handed to the local M.F.O., and a receipt was obtained on A.B. 10 (13). Urgent requirements of units were despatched by passenger train, and a railway policy was obtained from the R.T.O. (14).

Goods going by sea were delivered aboard, receipt being obtained through the E.S.O. on Bill of Lading, A.F. 964 (1).

Local units collected their requirements and gave a receipt in a special record book and on one copy of the P.N.I.V.

All cases, bundles, wrappings, and parcels were numbered; special records of these numbers were kept, showing contents, date of despatch, how despatched, etc.

16. *Return of Stores from Units in E.E.F.*—Stores received from units were accompanied by an issue voucher, Army Form G. 1033 (15). If no issue voucher was received, stores were taken on charge by C.R.V. (Certified Receipt Voucher, Army Form G. 1033) (16), one copy of which was sent to the unit for information and adjustment of their records.

Stores were deposited in the Checking Department and discrepancy reports, if necessary, were made out. They were then sorted out either as:

S.	Serviceable.	This information is marked up on the I.V. in the columns provided. See specimens (15) and (15A).
R.	Repairable.	
U.	Unserviceable (Scrap).	
D.	Doubtful.	

Serviceable stores were sent to the different sections on Extract (17).

A separate Extract was made out for each

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section, and the extract number was entered on the I.V. against each serviceable item.

An extract is made out in exactly the same way as an issue voucher, but must be endorsed "certified true extract of I.V. number (original I.V. number)."

The stores were next handed to the section with one copy of the extract, the storeman's signature being obtained on the book copy.

Repairable stores were sent to 644 Company for repair on Workshop Indent, Army Form G. 1045 (18). When returned by 644 Company on a Collection Note (19), repaired stores were sent to the sections on Workshop C.R.V. (20) quoting the same unit and R.V. number under which the stores were originally received, and also the Workshop Indent number.

Here it may be pointed out that a large number of so-called unserviceable stores were salved by this department, the value of stores so reclaimed amounting on an average to about £800 a month.

Unserviceable (Scrap).—These stores were sorted into different kinds of metals and weighed, the weight being entered on a form (15A) attached, Issue Voucher, and the stores were then disposed of in their respective dumps in the Unserviceable Department.

Solid tyres and outer covers were counted and the number entered on this form, and scrap inner tubes were weighed as scrap rubber and entered as such.

Doubtful stores were sent into the Reclaims Section with a view to their being salved if possible, in which case they became either repairable or scrap.

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All unserviceable scrap was either used in the Foundry or returned to Ordnance.

17. *Basis on which Up-keep of Stores was Maintained.*—An officer called the O. i/c. Provision was appointed, whose duty it was to see that stocks were provided to meet the demands from units or Advanced Bases as received.

Provision.—Owing to the varied conditions under which vehicles were used, the demands in this theatre were of a very fluctuating nature, and in consequence provisioning became a very difficult matter.

The system laid down by the War Office for these stores was that, working from an Order Card, Stores were to be ordered on the basis of a three months' stock governed by the previous three months' demands.

It was found in practice, however, that under this system the supplies received were quite unable to keep pace with the demands, which, owing to the heavy wear and tear on vehicles, were continually augmenting.

Further, the system did not allow for the expansion of stocks in time to cover requirements of new vehicles. Percentage schedules of spares were expected and initial supplies to cover the new demands, but only in a few instances were these actually received, and, even then, in many cases the supplies were not sufficient to cover the first demands.

These omissions often caused a serious depletion in the stocks held for the vehicles already in the country, and were felt especially in the case of Ford and Holt parts.

Again, the system did not make adequate pro-

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vision for increased wear, whether normal or abnormal, nor did it take into account outstandings as such which were caused by these defects.

It was in consequence found necessary to evolve some new form of ordering which would overcome these difficulties.

The first difficulty to overcome was the question of outstanding demands caused by Stores' inability to supply. On the W.O. system, orders on London were placed in the same manner on a card with outstanding as on one without, the result being that when the stores were received, in many cases they only just cleared the outstanding and the next demand received became another outstanding; so that a card sometimes became more and more swamped with outstandings, and the demands on this depot could not be met for a long time after the first call.

To correct this weakness it was decided to subtract the outstandings from the incoming stores, and then order on the system, thus ensuring that the orders outstanding on Home Depot would cover the outstandings on these stores.

The question of the increasing number of vehicles was overcome by placing "special orders," based on the demands of an equal number of similar vehicles over the system period of three months.

These demands were not taken into account in compiling later orders until actually received in store, thus creating, as it were, a special stock for new vehicles.

The most serious difficulty, however, was the abnormal increase in demands. After repeated efforts it was found that no perfect system could be evolved, especially as the accumulation of surplus

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stocks had to be avoided. Slight increases were placed on the special orders referred to above, but in many cases fell far short of the demand.

It was finally decided to try to overcome this difficulty by a close personal supervision of the ordering of spares, the officer selected for this duty being one who was able to tell by experience what parts of vehicles were likely to wear badly, and who could keep a careful watch upon the continual increase in demands. This method worked with a reasonable amount of success.

Another obstacle that made provisioning a difficult matter, and which could not have been foreseen, was the time required by Home Depot to fulfil orders. At first an average interval of from three to four months was sufficient, but this in some cases gradually increased, especially in Rolls-Royce, Siddeley-Deasy, Triumph, and American makes. In some measure this difficulty was overcome by extending the order system beyond the original three months' basis, and, whenever possible, by the use of local resources.

18. *The System of Demanding on Home M.T. Depot.*—In order to arrive at the amounts which should be demanded from Home Depot, the order cars were continually scrutinised and decisions were made when to place orders on the following system :

(i) The total demands from units plus outstandings were added together.

(ii) From this was subtracted the total demands already placed on Home M.T. Depot.

(iii) If the difference did not equal the last four months' demands from units, orders were placed to the nearest ten over and above this amount.

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As an example:

Total demands from units	33
Total outstanding	18
	51
Total demands on Home M.T. Depot . .	55
4 months' demands	10

The difference between 51 and 55 is 4.

The nearest 10 above 4 is 10, and the demand therefore was 10; the rule being to cover as far as possible the time during which stores are likely to take to arrive, which was usually about three or four months.

Home orders marked (22) were then sent out in quintriple: three copies were sent to Home M.T. Depot, one was filed in the Provision Department, and the fifth copy was sent to Home M.T. Depot by the next mail as confirmation.

On looking at the Order Card it will be seen that the last column provides for a "hastener." This hastener (see specimen attached (23)), was sent either by cable or letter, the reply being shown in red ink on the Order Card.

The Home M.T. Depot acknowledged the order by sending a statement (24), showing what action was taken on each order, and subsequently an Advice Note (25) was sent by them in duplicate (one of which was an Issue Voucher), which was compared with the original one.

Any discrepancies were noted, and Home M.T. Depot was then informed if the balance was still required.

When Home M.T. Depot despatched the stores demanded, an advice of shipment (26) was sent, giving case numbers, etc. (usually cabled).

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19. *The Records Department.*—This department concerned itself with the filing of receipted issue vouchers, receipt vouchers, certificate receipt vouchers, transfer vouchers, expense vouchers, as well as all issues on repayment and demands.

Files were kept in the following manner:

Receipted Issue Vouchers were filed in numerical order in their respective sections, and were made up in bundles of 200.

A register was kept showing outstanding Issue Vouchers, so that those which were unreceipted could be traced at any time. Duplicates would then be submitted to units for signature in order to complete accounts.

Receipt Vouchers were filed in numerical order, and a register was kept which showed for that R.V. the particular number allotted.

Transfer Vouchers, Certificate R.V., Expenses V., were all filed in numerical order in their respective bundles.

Indents, if completed, were filed in numerical order according to P.B. number in bundles of 200. If incomplete, one copy was filed in Central Office and one in the Section, also in numerical order according to P.B. number.

Description of the Advanced Base M.T. Stores Depot, Ludd.—This Stores was part of the Advanced Base M.T. Sub-depot, and was first formed early in 1917 at Ismailia. It was moved to Rafa in August 1917, and became much more important, as after the fall of Gaza in October 1917 it supplied all M.T. Units in the forward area. Till March 1918 it remained at Rafa, removing after the taking of Jerusalem and Jaffa to its present position at Ludd. All M.T. vehicles in the XXth and

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XXIst and Desert Mounted Corps and G.H.Q. area, amounting to over 4,000 of all types, were now supplied by this Stores.

It was placed near Ludd railway-station, with which it was connected by a siding. All stores, with the exception of tyres, were stocked under canvas. The tyre store was built of wood and matting.

The Stores was divided into 12 sections, corresponding with those of the Base M.T. Stores. Personnel allotted to each section was as below:

Accessories	4
N.I.V.	5
Holt	3
Packing	7
Lorries	3
Light cars	2
Ford	4
Tyres	2
Unserviceable	3
Motor-cycle	4
Native	1
Office	18
	56

System of Accounting.—Indents for stock were placed on the Base M.T. Stores on Army Form W. 8888 in duplicate. The stores on receipt from the Base were unpacked, and the packing note was checked by the packer who issued to the various section stores.

The storeman re-checked, entered up on his tally card, and made out discrepancy voucher if necessary. The packing note was returned to the order clerk who brought stores on charge, completing the receipt voucher, which was signed and returned to the Base.

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Units sent in their demands for stores on Army Form W. 3338, which on receipt was scrutinised and checked by an officer and entered in the Post Book.

Action Taken Sheets were then made out and passed to the section concerned, the section storeman making issues from stock and returning Action Taken Sheet to order clerk. If there were any unfulfilled demands, the sheet was returned to the storeman for supply when available.

The storeman prepared an I. & R. Voucher in quadruplicate, one copy of which was sent with the stores to the packers and served as a packing note; one was kept; and the other two were sent to the office.

The top copy was signed by an officer, and both copies were then sent to unit, which signed the duplicate and returned it as a receipt voucher.

Provision.—The most difficult and anxious feature of these stores was the up-keep of stock in quantities sufficient to meet demand.

Ordinarily one month's supply was kept in hand, but immediately an advance took place this was doubled.

The stores which required most careful watching were tyres, both solid and pneumatic. Previous to January 1918, lorry wheels were sent to the Base for retyring, as no tyre presses existed in Palestine, but about this date a tyre press was established at Ludd, and the tyres of all vehicles in the immediate area were drawn from this Stores.

The time taken to obtain stores from Base was never less than ten days.

Disposal of Unserviceable Stores.—All stores re-

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turned as unserviceable were sent back to the Base.

Appendix B shows the number of issues and illustrates the way in which the work of this Stores increased.

Company Stores.—The ordinary stores lorry was found to be quite satisfactory for wheeled M.T. Companies, but Tractor Company stores would have been better carried in a tractor truck fitted for the purpose.

The allowance of stores in G.1098 was in some items unsuitable, and the alterations suggested are embodied in the allowances of technical stores for E.M.R.U. Divisional Ammunition Park, Auxiliary Petrol Company, 6-inch Howitzer Battery, and Tractor Company attached.

It is considered necessary that Lorry Companies should carry the following:

(*a*) 100 feet of 2-inch leather belting for Albion Companies.

(*b*) Five spare driving chains per section of fifteen lorries, when chain driven.

(*c*) Six steering sectors for Peerless Companies, while the present type of sector is in use.

(*d*) Four fan pulleys (bottom) for Peerless Companies.

(*e*) Four connecting rods complete per company.

Accounting.—A Tally Card (3) was kept for each item showing receipts, issues, and stock.

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CHAPTER XIV

INTERIOR ECONOMY OF M.T. UNITS

1. *Medical Arrangements.*—(*a*) The sicknesses most prevalent were sand-fly fever, diarrhœa, dysentery, and malaria. Abrasions became septic very easily, and as M.T. men are particularly liable to cuts and scratches daily, iodine parades for the dressing of such wounds were held.

(*b*) *Sick bays* were established by the majority of M.T. Companies, in which men with minor ailments could rest and receive simple treatment and special diet.

The use of these bays enabled many men who would have been sent to hospital to return to duty after a few days' rest.

No medical chest or outfit was included in the G.1098 for M.T. units. Some such outfit should certainly be included.

(*c*) *Sanitation.*—Flies were very prevalent, and to reduce their number and the harm done by them as much as possible fly-proof food safes, cook-houses, and latrines were built; soakpits and grease traps were made, and all refuse was burnt or buried daily. As burying was not always possible in a rocky country and the burning of excreta was difficult when urine was present, a simple and effective portable latrine which separated the urine

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from the fæces was made out of a petrol box and two petrol tins.

Hot water for washing was obtained from apparatus made in various ways according to the material obtainable. The fuel used was workshop refuse—wood shavings, oily rags, cotton waste, etc. Shower baths were also built; every man had a daily hot bath, which was greatly appreciated after a long day in the heat and dust.

2. *Messing.*—Nearly every unit in the field had the chief meal of the day in the evening, because the men were, as a rule, away from camp during the day. Flies do not swarm over food after sundown, and the men preferred to have a good hot meal in the cool of the evening after they had cleaned up.

A haversack ration of tea, bread and cheese, or jam, was issued for the midday meal to each man, except for convoy running, when it was usual to detail a general duty man to go with the convoys to prepare and issue the midday meal. The latter was much the better method, as time and rations were economised by it.

The lack of trained cooks was severely felt, as without them it was almost impossible to avoid sameness in the food, although the untrained men did their best by building baking ovens, fire trenches, etc.

Some companies bought their cooks proper jackets and aprons, but these should certainly be provided by R.A.O.D., as part of their clothing.

3. *Sleeping Accommodation.*—In the periods between operations, tents were provided for most of the men, but drivers usually preferred to sleep in their lorries.

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Beds raised off the ground were found to be necessary to keep the men fit, and these were made by the men out of any material they could get. These were inevitably clumsy and liable to become insanitary, and it is considered that a suitable folding bed or stretcher should be provided. Two or three of these beds could easily be carried in each lorry, and the lorry and drivers would then become self-contained and the demand for tentage proportionately reduced. A locker for men's kits, placed high up at the back of the driver's head inside the lorry, would also be a great convenience, and would not interfere with the load.

A small electric lamp should be issued for use inside every lorry and could be lit from an accumulator. This would reduce the danger of fire to a minimum, as it often became necessary to make some adjustment to the engine or to fill up with petrol after dark, and this is dangerous even when side lamps are used.

No extra cost would be entailed beyond the initial outlay on the lamp, as the accumulator could always be recharged in the workshops. Dry-battery hand lamps would be of no use in the field.

4. *Canteens.*—Every company ran its own canteen, and great efforts were made to make them as attractive as possible. It was found that the health of the men was improved when a fair supply of beer was available.

Concert parties were organised successfully, and were interchanged between neighbouring companies.

5. *Clothing and Equipment.*—The following changes in the clothing of M.T. units are suggested:

(i) Slouched hats in lieu of sun-helmets. Helmets through bumping against the back of the driver's

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seat are apt to fall over the eyes, and are therefore dangerous when driving. They are also unwearable by artificers at work.

(ii) Pantaloons, *cord*, in lieu of trousers, S.D.

(iii) Greatcoat to be double-breasted, have a thick detachable lining, and to be retained in summer.

(iv) Canvas leggings in lieu of puttees.

(v) Two pairs of boots and two hand-towels per man instead of one of each.

(vi) One combined waterproof coat and ground sheet to be issued per man.

(vii) Rifle cover for the breach cover.

(viii) Six bass brooms in lieu of sweeping brushes.

(ix) Hurricane lamps in lieu of folding tent lamps.

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PART III

CHAPTER XV

DONKEY TRANSPORT

1. *Formation.*—We formed our first Donkey Transport Company in October 1917 at Rafa, prior to the Beersheba–Gaza operations which culminated in the surrender of Jerusalem on December 9, 1917. We anticipated that our other forms of transport —e.g. Camel, horse, and mechanical—would inevitably be restricted in their movements when once troops got into the Judæan Range of hills, and so events proved.

No. 1 Donkey Company moved from Rafa when the advance began on October 31, 1917, with the capture of Beersheba, and was employed during the whole of the winter in the mountains under very arduous conditions of wet and cold. No. 2 Donkey Company was formed in November 1917, Nos. 3 and 4 in December 1917 and January 1918, and these three further units likewise moved up to the front as soon as they were organised and equipped.

2. *Organisation.*—Each Donkey Company consisted of 2,000 donkeys, a company being organised with a Headquarters and 4 sections, each section consisting of 500 donkeys.

Establishment attached.

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3. *Work Done.*—These Companies were used for every kind of work—ammunition, rations, water, entrenching tools, stones for road-making, and so forth: a sufficiently varying type of load to make one wonder what type of saddle would be best suited. In practice we found a well-lined pad surmounted by a pair of saddle-trees fitted with the ordinary pack-mule saddle type of loading hook was as satisfactory as any. For carrying stone for road-making, a sort of twin bag made of stout canvas was laid over the pad (saddle-trees and such-like removed), and the bag kept in position when loaded by the ordinary method of "counterpoise." Canvas head collars and ordinary head ropes and picketing gear.

4. *Shoeing.*—Shoeing was another difficulty! Practically all our 8,000 donkeys came from Egypt or the Sudan. None of them (and probably few of their ancestors) had ever been shod; but we found it very necessary to do so when they were working in the mountains of Palestine. The ground, naturally flinty and gritty, became when wet like a knife-sharpener's grinding wheel. Special shoes had to be made therefore in Egypt. All shoeing was done "cold." Incidentally these donkeys were adepts at "drop-kicking" when being shod!

5. *Rations.*—I forget the exact daily rations the donkeys got, but so far as I remember it was about 6 lb. of tibn, 8 lb. gram or barley or millet. Too much grain had an undesirable effect on the "spirits" of the donkey! They fed out of nose-bags. Water: twice a day whenever it was possible.

6. *Personnel.*—One driver was in charge of three

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donkeys, and he had quite enough to do to look after them.

7. *Casualties.*

	Killed.	Wounded.	Died of Wounds.	Died of Exposure.	Total.
1917 .	5	5	2	233	245
1918 .	9	12	—	2	23
	14	17	2	235	268

8. *Loads.*—We always tried to limit loads to 160 lb. But our donkeys varied so much in size and weight-carrying capacity that the only practical thing to do was to give orders to avoid "overloading"; and certainly we had no cause to regret this "latitude," for the way the British officers and N.C.O.s looked after their charges was most praiseworthy.

9. *Injuries.*—Bites and kicks formed the majority of injuries. Sore backs were remarkably rare, as were also heel-rope galls. We did not, of course, "clip." Each donkey had a rug.

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No. 2004/161*

DONKEY TRANSPORT COMPANY, R.A.S.C.

(Consisting of Headquarters and 4 Sections.)

War Establishment.

121/Medn./3418.

Detail.	Personnel.						Animals.				Remarks.
	Officers.	Warrant Officers.	Clerks.	Staff-Sergeants and Sergeants.	Natives.	Total.	Riding Horses.	Riding Donkeys.	Pack Donkeys.	Total.	
Headquarters	3	—	2	—	—	5	3	—	—	3	
Headquarters (attached)	—	—	—	—	6	6	—	—	—	—	
Four Sections	4	4	—	12	—	20	12	8	—	20	
Four Sections (attached)	—	—	—	4	788	792	—	4	2,000	2,004	
Total Company (excluding attached)	7	4	2	12	—	25	15	8	—	23	
Total Company (including attached)	7	4	2	16	794	823	15	12	2,000	2,027	

* Supersedes W.E. No. 1255.

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DONKEY TRANSPORT COMPANY, R.A.S.C. WAR ESTABLISHMENT (*continued*)

Composition in Detail. Personnel and Animals.

Detail.	Personnel.						Animals.				Remarks.
	Officers.	Warrant Officers.	Clerks.	Staff-Sergeants and Sergeants.	Natives.	Total.	Riding Horses.	Riding Donkeys.	Pack Donkeys.	Total.	
HEADQUARTERS.											
Commanding Officer (Captain)	1	—	—	—	—	1	1	—	—	1	
Adjutant	1	—	—	—	—	1	1	—	—	1	
Quartermaster	1	—	—	—	—	1	1	—	—	1	
Clerks	—	—	2 (*a*)	—	—	2	—	—	—	—	(*a*) Includes one Corporal.
Total	3	—	2	—	—	5	3	—	—	3	
Attached :											
Batmen	—	—	—	—	6	6	—	—	—	—	
Total Headquarters (including attached)	3	—	2	—	6	11	3	—	—	3	
4 SECTIONS (EACH)											
Section Officer (subaltern)	1	—	—	—	—	1	1	—	—	1	
Company Sergeant-Major	—	1	—	—	—	1	1	—	—	1	
Company Quartermaster-Sergeant	—	—	—	1	—	1	—	1	—	1	
Sergeants	—	—	—	2	—	2	1	1	—	2	
Total	1	1	—	3	—	5	3	2	—	5	
Attached :											
Sergeant, R.A.V.C. (*b*)	—	—	—	1	—	1	—	1	—	1	(*b*) One of four Sergeants, R.A.V.C., will be a Staff-Sergeant.
Bash reis	—	—	—	—	1	1	—	—	—	—	
Reis	—	—	—	—	5	5	—	—	—	—	
Drivers	—	—	—	—	167(*c*)	167	—	—	500	500	
Drivers (spare)	—	—	—	—	15	15	—	—	—	—	
Saddlers	—	—	—	—	2	2	—	—	—	—	
Cold Shoers	—	—	—	—	5	5	—	—	—	—	
Batmen	—	—	—	—	2	2	—	—	—	—	(*c*) Includes two trained in sanitary duties.
Total each Section (including attached)	1	1	—	4	197	203	3	3	500	506	

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PART IV

CHAPTER XVI

PERSONAL REMINISCENCES

DATES IN THE WAR WITH TURKEY VERSUS THE EGYPTIAN EXPEDITIONARY FORCE, 1916

August 4 . .	Battle of Romani. Defeat of Turks' second attempt to invade Egypt.
December 23. .	Battle of Maghdaba. Turks cleared from Sinai.

1917

March 26–27 .	First Battle of Gaza.
April 19 . .	Second Battle of Gaza.
October 31–November 7 . .	Turkish Beersheba–Gaza front broken.
December 9 . .	Jerusalem surrendered.

1918

February 21 . .	Jericho captured.
September 18–20 .	The Final Offensive: complete defeat of the Turks.
October 1 . .	Damascus occupied.
October 6 . .	Beirut occupied.
October 15 . .	Hons occupied.
October 26 . .	Aleppo occupied.

1. *Egypt, Early* 1916.—On January 3, 1916, I arrived back at Mudros from Salonica, whither I had been sent by my Director on temporary duty in connection with certain transport questions.

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The Expeditionary Force at Salonica was at that time under the M.E.F. I found on my return to Mudros that G.H.Q. and all Directorates had left for Egypt, and so I followed suit and was lucky enough to get a cabin on the *Empress of Britain*, sailing that day for Alexandria. We had an uneventful voyage so far as submarines were concerned, and reached Alexandria on January 6.

G.H.Q. had been temporarily "housed" in Cairo—and thither I proceeded and found our Directorate at the Continental Hotel. The 6th of January, 1916, was a Saturday, and there was a dance that night at the Continental. It is a strange feeling when you have been out in the wilds for many months to come back to what is called civilisation; in many ways the latter seemed so artificial when compared to the realities that had been the daily experience of so many in Gallipoli. However, one can get used to most things, I suppose!

General Sir Archibald Murray was now our Commander-in-Chief, he having succeeded General Sir Charles Munro, who subsequently became Commander-in-Chief in India.

Cairo was literally "overflowing" with Generals at this time—they were as common as the proverbial blackberry in England in a warm September; and in addition, the ancient land of Egypt was "split up," so far as military command went, into three. "Split up" really explains the situation, for no one rightly knew the lines of demarcations of General Murray's command as G.O.C.-in-C., M.E.F., General Maxwell's command as G.O.C. Egypt, or General Altham's command as G.O.C. Levant Base. Verily the practical joke department (as Ian Hay would have called it) which devised this scheme

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of things had done its nefarious work right well!

G.H.Q., M.E.F., did not long remain in Cairo, as on January 21, 1916, we packed up and departed for Ismailia, our Headquarters being established in the French Hospital on the banks of the Suez Canal at Ferry Post. I shall always remember with joy the flowers that grew in that hospital garden—red roses, violets, fresias, jasmine; they alone made life worth living, surrounded as we were with naught else 'cept yellow sand.

G.H.Q. remained at Ismailia till October 21, 1916, when we migrated back to Cairo. Here I should perhaps add that in March 1916 our Force became known as the Egyptian Expeditionary Force. Our nine months' sojourn on the banks of the Canal were full of spade-work. The whole of our Transport Services had to be organised or reorganised. Rumour had it that the Turks contemplated a second attack on the Canal; it will be remembered that they had already made one attempt in the early part of 1915, and so to meet such a contingency our forces were spread in a general north and south line parallel to the Canal, extending from Kantara in the north to Ain Musa in the south. The defences consisted of a continuous series of fortified redoubts some ten miles distant inland from the eastern side of the Canal. Roads suitable for 3-ton lorries were ultimately made, and supplies, etc., were also conveyed out to the front line by means of a series of light railways.

When we first arrived at Ismailia, the only means of getting to such places as Kantara, Ballah, Ferdan, Serapeum, Shalluffa, Kubrit, etc., was by the railway, which ran, as now, parallel to the Canal

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on the western or Egyptian side. Later on we made full use of our R.A.S.C. motor-boats when they had come down from Gallipoli and Mudros, after the evacuation of the Peninsula; and later on still, in the northern half, a road was made alongside of the railway, first to Kantara, and subsequently to Port Said, along which one could motor.

Tel-el-Kebir in these days was a busy spot, as there were concentrated the Anzac Divisions which subsequently proceeded to France. A motor road was also made from Ismailia to Tel-el-Kebir, from which latter place you could travel on to Cairo by road.

I remember coming back by motor-boat late one evening from Tel-el-Kebir along the "Sweet-Water" Canal, at an hour when all the villagers used to come to fill their large earthenware bottles with water; we were travelling fairly fast and a good two-foot stern-wave followed in our wake. Round a bend of the Canal on the edge of the water were squatted all the village belles, who watched with interest our boat as she passed by, and then suddenly an almighty yell broke the dead silence of the Egyptian evening, as our stern-wave caught all these dusky fairies "amidships."

Our communications on the Canal in 1916—road, canal, and railway—provide an interesting instance on a small scale of lateral communications.

2. *Indian A.T. Cart Transport.*—Monday, February 14, 1916. I was present at a very interesting inspection the Commander-in-Chief (General Murray) made at Ismailia, of the special Divisional Train (composed of Indian A.T. carts and those wonderful little mules with their Indian drivers)

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for service in Mesopotamia with the 13th Division, which was shortly leaving our Force for that theatre.

The Mule Corps units on this parade were the 2nd, 9th, 11th, 28th, and 32nd. Many of them, British officers and conductors of the Indian Army, native personnel, and the mules as well, had already seen service in France and in Gallipoli. I don't think I have ever seen a better animal transport "turn-out" on parade than this one. The harness and the condition of the mules alone were perfect. The Commander-in-Chief appreciated it too, for as he addressed the parade he finished up with the words: "I do not wish you to think that I am only using words of empty flattery, but I have never seen a parade which has impressed me more."

Later on in Palestine in 1918 I was destined to meet some of those who had been on this parade—they came back to us when the 3rd and 7th Indian Divisions from Mesopotamia came to our Force in the summer of 1918; but two strenuous years in Mesopotamia had made heavy toll of their former state of efficiency, and they never again reached their 1915–16 standard of excellence.

3. *Visit of Egyptian Notables.*—Wednesday, March 1, 1916. We had a visit at Ismailia from a large number of Egyptian notables from Cairo and elsewhere. They were shown over H.M.S. *Cornwallis*, then lying in Lake Timsah; aeroplanes gave a special display of flying; and last, but not least, their visit at Ferry Post coincided with the passage of the *Franconia* through that part of the Canal. She was, so I was told, the biggest liner that had yet been through the Canal; certainly she only just managed to get round the bend at

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Ferry Post. I hope these distinguished Egyptian gentlemen went away duly impressed and realised that we were not "down" on the Canal just for the sake of our health!

There comes to mind the occasion in the summer of 1917 when we were back again at Cairo, and an enemy aeroplane flew over from Southern Sinai, and came and dropped bombs in the city, several falling quite unpleasantly close to G.H.Q. then situated at the Savoy Hotel. Bazaar rumour was persistent that this aeroplane was a British one and not an enemy one, and that its purport was solely to intimidate the Egyptians!

4. *Caterpillar Tractors.*—In looking back from 1924 as I write these notes I cannot refrain from recording the persistency with which my then Director (Major-General F. W. Koe) used in 1916 to advocate the use of caterpillar tractors for tackling the problem of desert transport. Undoubtedly he was literally on the right "track." We tried many experiments with cars and caterpillar tractors to tackle the question of how best to get over sand; and had we had or been able to obtain sufficient caterpillar tractors and trucks, it would certainly have been an asset of great value. The United States formed the source of supply for our Holt caterpillar tractors, and such few as we had had of necessity to be pooled for heavy guns, the laying of the water-pipe line across Sinai, and a few for supply purposes. Meanwhile our friends the French appear to have tackled the sands of the Western Sahara successfully with Citroën cars fitted with tracks of a somewhat similar principle to the Holt tractor.

5. *H.R.H. The Prince of Wales.*—His Royal

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Highness the Prince of Wales was at G.H.Q. for several weeks about this time (March 1916), and I remember taking him to Ferdan on March 28, there to see some tractors with loaded trucks "negotiating" sand-dunes, etc. It was a piping hot day, and he literally walked me off my legs! On our return to G.H.Q. about 2 p.m. I suggested he pay a visit to our mess, which was just outside G.H.Q. offices, and have something to drink. "No, thanks very much," he answered. "Oh! but you must," I ventured to urge. "You cannot go about in a boiling hot sun like this and not replenish all you've lost!" "No"—he wouldn't—"thanks very much indeed all the same. You see," he added with a twinkle in his eye, "I'm so afraid of getting stout like my grandfather was."

I have met but few people who possessed to a greater degree that power of personal attraction which his Royal Highness is so pre-eminently gifted with; no matter who you were or what you were, or however slight the service anyone rendered, his thanks were as sincere as they were gracious.

6. *Egyptian Personnel as Drivers of Horse Transport Vehicles.*—In April 1916 we started our initial experiment in trying Egyptian personnel as drivers for Horse Transport vehicles. We started with fifty. The language question was a difficulty that was solved in part by the help we received from the Egyptian Army authorities in Cairo, who kindly loaned us the services of certain Egyptian Army officers who acted as interpreters. I would not go so far as to say that we voluntarily adopted this scheme of replacing British R.A.S.C. Horse Transport drivers by Egyptians—circumstances dictated it. The greatest opposition to the scheme emanated

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from a certain regular British officer who had had a certain amount of experience in the Egyptian Army. He could say nothing good of it and declined flatly to have aught to do with it. However, by slow degrees we went ahead, and in November 1918, when the "whistle was sounded and no side was called," we had a total of 8,476 Egyptian personnel employed purely on R.A.S.C. Horse Transport duties in Divisional Trains, Auxiliary Horse Transport Companies, Field Ambulances, and so forth.

They did their work right well, and in particular I shall always remember one certain occasion in the spring of 1918, during some fighting to the north of Jerusalem, seeing a Divisional Train Company—teams of four in each G.S. waggon—driven by the Egyptian drivers from the box-seat, returning through a deserted native village along a road that was more like a river-bed strewn with boulders the while the place was being shelled.

There was no panic—mules and drivers just went along as unconcernedly as if they'd been in the Delta of Egypt.

What a diversity of points had to be considered and dealt with over our Egyptian Horse Transport drivers! Their initial recruitment was originally for a period of only three months; later it was extended to six months; and finally, in 1918, thanks to the co-operation of Egyptian Army Headquarters in Egypt, we got Egyptian Army conscripts, a depot to train them being established at Tel-el-Kebir under Major Ritson, of the Egyptian Army and of polo fame.

Questions of pay, married allowance, compensa-

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tion in case of death or injury, leave, rations, clothing, equipment, punishments, promotions, bonus on re-enlistment, discharges, medical inspection, to mention but a few, had all to be considered and dealt with, and certainly that small coterie of British R.A.S.C. officers and N.C.O.s can look back with justifiable pride on the results achieved by the training they gave, and equally the Egyptian people may justly be proud of the services rendered during 1916, 1917, and 1918, by several thousand Egyptian Fellaheen who worked so well in our Horse Transport formations.

7. *Australian Imperial Forces.*—Although the Australian and New Zealand Infantry Divisions left our Expeditionary Force in the early part of 1916 for France, we still had many of their compatriots left with us in the Anzac Mounted Divisions, which, as history has recorded, played so prominent a part in the subsequent conquest of Sinai, Palestine, and Syria. Foremost amongst them was Lieutenant-General Sir Harry Chauvel. From time to time I was able to help him in a small way over motor-cars and such-like, and afterwards there always came to one a most courteous little note of thanks. Much grace can go with a little gift.

Our relationship with others was equally happy, and one of my most treasured relics to this day is a farewell letter I received in 1919, when I left the E.E.F. for duty at home, from my friend Lieutenant-Colonel Stansfield, D.S.O., A.D.S.T., Desert Mounted Corps.

"We Australians one and all appreciate," he wrote, and then went on to add words that were far too generous for anything I had ever done. We write each other an annual letter still; he

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gives me news of many of his old folk who did such great work in the days of the E.E.F.

We always took great pride in the way Major Haddon, one of our D.A.D.T.s at G.H.Q., controlled with wonderful accuracy the whereabouts of all and every M.T. vehicle. One day he came into my office with a worried look and explained he had just discovered the existence of a Ford car in a Light Armoured Car unit at Sollum in the Western Desert whose previous existence was completely unknown to him! Enquiries were duly made and resulted in our learning that the O.C. this particular unit—a versatile Australian—had demanded, bit by bit, various spare parts ostensibly for the cars, etc., already with his unit, until he had amassed sufficient to build a new car!

Early environment must needs play its part in the world's scheme of things, and by means of a practical joke we successfully contrived to remedy a slight defect in a certain Australian A.S.C. Horse Transport unit. I refer to sentries on horse-lines in the desert. Arrangements were accordingly made for the Commanding Officer of an adjoining Horse Transport unit to send certain trusty and well-chosen men of his unit to the horse-lines of his neighbour's unit, thence to remove at dead of night some half-dozen riding horses and secret them away. The coup was successful to a degree! I was telephoned and told the result of the raid! Those despoiled raised a hue and cry; eventually the horses were restored to their rightful owners and sentries became almost unpleasantly alert. I wonder if my two friends Lieutenant-Colonels Loveridge and Maunder remember the episode!

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There was a story current in August 1917 of how when Lord Allenby was inspecting one day certain A.I.F. Mounted Troops, he stopped opposite a grey-haired trooper who wore both South African Medal ribbons, and asked, "Well, are we going to give these Turks a hiding?" Came the ready response: "I'm —— if I know; that's your —— business!"

The ——s, I may add, were verbs and adjectives of a more than ordinary lurid hue!

The Chief smiled.

Another gallant Australian that I met from time to time was General Royston, who commanded the 3rd Australian Light Horse Brigade. He was a veritable fire-eater and always led his Brigade into action, much to the discomfiture of his Staff, who perforce had to follow him as if on parade! If in the desert the going in the sand became too heavy, I'm told he used to dismount and fight on foot, such as at Maghdabah. He too was a veteran of the South African War, and wore, in addition to his three rows of medal ribbons, the Royal Humane Society one as well.

Brigadier-General C.F. Cox, C.B., C.M.G., D.S.O., was yet another great character. He was popularly known as "Damn-all Cox." There comes to mind the famous occasion in the summer of 1918 when the General's Brigade (1st Australian Light Horse) was heavily attacked at night by the Turks and Germans, north of Jericho. The enemy gained a momentary advantage; the General was aroused and told that, owing to telephone lines being damaged, it was not quite clear what had happened. "Kick the ——s out," was the only order he gave! In due course the

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purport of the order was put into effect, and later on in went the General's report of the incident. "I have the honour, etc., to report that enemy forces attacked and penetrated our line, etc. etc. I gave immediate orders for the 'battle' to be restored—this was accordingly done."

One has heard it said that the Australians were difficult people to deal with. Certainly our experience with them over transport matters was anything but that, and should it ever be my fate to go on service again, I can wish for nothing better than to have as good a lot of fellows to work with as we had in the Australian and New Zealand Transport Units of the E.E.F., such as Stansfield, Howel-Price, Loveridge, and Maunder—good fellows all. True, they had an eye for any nice serviceable cars the Germans and Turks abandoned in their 1918 flight! But, then, who hadn't!!

8. *Tour of the Western Desert*, 1916.—I had a most interesting tour during June 1916 with my friend Colonel C. H. Whittingham, our Inspector, Camel Transport Corps, all over our Western Front. I should explain that the Western Desert of Egypt was at this time the scene of extensive gun-running by the Senussi, the avowed object being to raise civil disturbance throughout Egypt. Our first resting-place was Kharga, a wonderful oasis right out in the desert one hundred miles or so west of Junction Station and Qara. Colonel Angus McNeill, 2nd Lovat's Scouts Yeomanry, who subsequently commanded a Brigade of the 54th Division and in later days still was Commandant of the Palestine Gendarmerie, was at that time in Command at Kharga. There can be few people better known in the Army of some twenty years

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ago than he, for he was then Adjutant at the M.I. School at Longmoor when Colonel (now Lieutenant-General) Godley was Commandant, and I wonder how many British Infantry officers he must have initiated into the joys of fox-hunting—to say nothing of riding in general, and polo in addition. He was always immaculately turned out.

From Kharga we retraced our steps to Qara, and there I met another great huntsman—Colonel R. A. Sanders, famous as Master of the Devon and Somerset Staghounds, and afterwards Minister of Agriculture in Mr. Stanley Baldwin's Cabinet. The previous occasion I had met him was in 1899, when he had given me a deer's slot as a memento of a particular day's hunting on Exmoor. I possess that slot still.

Minia was our next stop, General Hebert being in command there. He had great respect for the eastern sun and never ventured forth without carrying a gigantic sun-proof umbrella! From Minia we journeyed by car to Samalut, and early one morning I set forth in a Rolls-Royce out to the front block-house at Shusha. We started at 3 a.m., and I've never experienced anything like the exhilaration produced by the cold fresh early-morning air of the desert. It was like champagne. The going for the most part was good, but now and again we struck patches of soft sand, and it was as much as even a Rolls could negotiate. And then the sun came out and bang went all our champagne air!

From Minia we went to the Fayoum, where General Bromley-Davenport was in command. I so well remember at lunch his saying: "How we Englishmen like to play with fire! Here am I

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with one Yeomanry Regiment and a few other troops trying to keep peace and order over a front of —— miles over a population of many thousands, most of whom are avowedly in favour of the Senussi!"

It was on the very fringe of the Fayoum too—as old Omar would have said, "which just divides the desert from the sown"—that I met a Yeomanry Major in his mess-tent reading Hitchin's great novel *Belladonna*. "How do you like it?" I enquired. "Well," he replied, "I can understand any woman poisoning her husband who brought her to a place like this!" The Mudir of the Fayoum—Hamdi Pasha—was most hospitable to us whilst we were there.

Another thing for which the Fayoum would be hard to beat was the croaking of the bull-frogs at night. Sleep was impossible!

From the Fayoum we went in due course to Alexandria, and there took boat to Mersa Matruh, and finally to Sollum. We were inspecting some of our camels grazing near Matruh one day, and seeing an Arab encampment near by, Whittingham judged there must be some water handy, and so there was. We got some Arabs to bring along a canvas bucket attached to which were unending yards of rope; this was lowered into the well, the stones at the mouth being worn into grooves through countless years of use, and presently up came a bucket full of ice-cold water. One hundred and twenty feet of rope had first to be let down, though!

9. *S. and T. Directorate, G.H.Q.*—On my return to G.H.Q. on June 29, 1916, I found that my Director (Brigadier-General Koe) had been pro-

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moted Major-General, and had left for England on leave—he had been far from well for some time. He did not return to us, but later that year became I.G.C., Salonica.

I had come out in February 1915 as his D.A.D.T., at the very commencement of the Dardanelles Expedition, and when Colonel Striedinger, our original A.D.T., went as such to Salonica in October 1915, General Koe was generous enough to my many shortcomings as to put me in as A.D.T., in Colonel Striedinger's place. The appointment of so junior an officer as myself to be an A.D.T. met with very considerable opposition from the powers that then controlled our Department at the War Office; but General Koe, supported by the D.Q.M.G. (Lieutenant-General Sir Walter Campbell) and backed by the Chief (General Sir Charles Munro), stuck to his guns, and so I remained. General Koe was strong in his likes and dislikes; for reasons which I cannot explain, he liked me from the first, and I, for my part, shall always regard him as one of the best friends I have ever had. He was a perfect "horseman," and as he rode a horse so he dealt with those who were privileged to be his friends; he left you alone to do your work, and his successor as D.S.T. was just the same. I refer to Colonel (now Major-General) G. F. Davies, with whom I subsequently remained as A.D.T. till the early days of 1919. To both of them I owe a debt of gratitude for kindnesses innumerable, none of which by any stretch of imagination can I ever hope to be competent to repay.

Our Directorate throughout was one continuous happy family, and to that factor, due entirely to the example set us by our two D.S.T.s, may be

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ascribed the success that admittedly attended the Supply and Transport Services of the Egyptian Expeditionary Force. We lesser beings always knew we had the support and sympathy of our Chiefs. We never hid anything from them; they honoured us with their trust; and we did our little best never to let that trust be tarnished.

Above all—and apart from purely our own Directorate and its attendant Supply and Transport Services—was the knowledge that we had in our D.Q.M.G. (Lieutenant-General Sir Walter Campbell) an officer unequalled in his sympathetic knowledge of Supplies and Transport. Yes, we were indeed more than fortunate.

There is nothing more difficult than graciously to express words of thanks, but as one of very many in the E.E.F. whose daily life was made easy and happy by those whom I have named above, I feel the least I can attempt to do is thus even so inadequately to record all they meant to us.

10. *Sinai and Southern Palestine.*—I think my first real acquaintance with Sinai may be dated from a certain sweltering day in mid-July 1916, when in company with Colonel Whittingham and Lieutenant-Colonel P. C. de la Pryme, D.S.O., R.A.S.C., we went out along the recently laid railway from Kantara by motor-trolly to Romani, some twenty-odd miles. A few weeks later (August 1916) there came the fighting at Romani, and from then may be dated the commencement of that wonderful advance across the sands of Sinai, later to be continued through the plains and mountains of Palestine, and so on till the culmination in October 1918 of Lord Allenby's last and final

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advance that resulted in the capture of Aleppo and the surrender of the Turks.

There were indeed many problems that had to be met in that advance across Sinai via Romani, El Arish, El Burg, Sheikh Zowaid, Rafa, and Khan Yunis, and of them all I suppose the most vital was the water-supply one. One day in August 1917, prior to the Gaza–Beersheba operations, I chanced to be at Lieutenant-General Sir Philip Chetwode's Headquarters (he had just become Corps Commander XXth Corps on the reorganisation consequent upon Lord Allenby's arrival a few weeks earlier), and the Corps Commander remarked that he had recently written to Sir Henry Rawlinson (as he then was) in France, and told him of the difficulties over our water-supply in our theatre. He had just had a reply from Sir Henry, who'd commented: "Why don't you do as I've done in my Army Area here? I've got nearly twenty miles of pipe lines laid down." The Corps Commander smiled. "I must tell him," he said, "we've already got one hundred and fifty miles of pipe line." And so we had, for until we found the wells at Khan Yunis, Beni Sela, Deir el Belah, and Shellal, we were practically entirely dependent for all our drinking water from the Port Said branch of the Sweet-Water Canal at Kantara. A plant to filter some 600,000 gallons of water per diem was installed at Kantara, whence the filtered water was pumped through syphons under the Suez Canal into reservoirs on the east bank; thence it was conveyed by 12-inch, 10-inch, and 8-inch steel pipes laid in the sand of the desert divided in four sections, each section being approximately twenty-five miles, to El Arish and later to Rafa, whence

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smaller lines were laid radiating out to our front line south of Gaza–Beersheba.

Such in brief was the admirable work accomplished by the Royal Engineers, which we of those days regarded as a matter of course, and which the majority of the present-day world are totally ignorant of! And whilst on the question of water supply it may not be out of place to record another great achievement by the Royal Engineers—I refer to the water supply of Jerusalem. It was primarily based on the system that history records had been initiated by Pontius Pilate! Between April and June 1918 some twelve miles of pipes were laid from south of Jerusalem, starting from the neighbourhood of Solomon's Pools between Bethlehem and Hebron, and the Holy City received a daily supply of nearly 300,000 gallons—a piece of work as great as it is romantic.

Our eastward advance through Northern Sinai followed in the main the ancient caravan route that connected the Holy Land with Egypt. At Romani there were quantities of date palms, whilst at El Arish in the bed of the wadi fig trees were equally profuse; but it wasn't till one reached Khan Yunis that one saw signs of cultivation, and what a wonderful sight it was before the passage of many thousands of horses and camels had laid it all low—the unending acres of yellow corn in which were mingled masses of scarlet poppies in that triangle of land lying to the south of the Wadi Ghuzze!

Deir el Belah was an attractive place too at first, with its orchards of apricot trees, pomegranates, etc. A friend of mine, Major Portal, D.S.O., who was in the Remount Branch, possessed

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amongst many other accomplishments that of being a great naturalist. He was collecting for the Cairo Zoo any odds and ends of birds, animals, or reptiles he could pick up. On one occasion, in May 1917, I had been up on duty to East Force (as our Desert Force was then known) from G.H.Q., Cairo, and Portal asked me to take back a collection of the aforesaid odds and ends to the Zoo on my return to Cairo. "They'll be all right," he said. "You will be leaving by the 6 p.m. train to-night, so they'll be at the Zoo by 2 p.m. to-morrow, and they can go without food till then." I forget the exact composition of this zoological collection, but it certainly contained various species of desert rats and a poisonous snake. The whole were located in various boxes, cardboard and wooden. As we started for Belah station, the wind, which had been bad all day, got infinitely worse, and it was obvious we were in for a khamseem. We were! Our train was held up, the line was blocked by sand, and, to cut a long story short, we eventually reached Cairo some thirty hours late! Meanwhile what of our pets? The rats had practically gnawed their way out of their boxes, and in doing so had only just missed liberating the snake. I luckily had a car to meet me when I arrived at Cairo, and we drove with the throttle wide open straight to the Zoo, and there I just succeeded in depositing my collection of live-stock in time. I never again acted as courier!

It was interesting to see the method by which the Turks brought some heavy guns across Sinai and which took part in the fighting at Romani in August 1916. They cut tracks for the gun wheels in the sand, and filled the excavations with alternate

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layers of desert scrub and sand, and pounded them together to such good effect that these tracks were as hard as concrete. I saw this at Kilo 73 on the railway from Kantara one day at the end of September 1916, whither I had gone out by motor-trolly with the late Colonel M. E. Sowerby, who played so great and so successful a part in the laying of this railway, which ultimately reached Jerusalem via Ludd, whilst the other branch from Ludd went on to Haifa.

11. *Field-Marshal Viscount Allenby.*—On June 13, 1917, news reached G.H.Q. that General Murray was being succeeded by General Allenby (as our Chief-to-be then was).

He arrived at Cairo on Wednesday, June 27, and within less than forty-eight hours he had made the acquaintance of every officer in every branch at G.H.Q. He came round our Directorate, for instance, accompanied by General Campbell (our D.Q.M.G.). He went to each person's office, shook hands with you, and had a few minutes' chat about your work and so on. I cannot adequately describe the far-reaching effect this simple act had on all such small fry like myself; you felt instinctively that there was nothing you would not try your best to do, and from the date of his arrival as our Commander-in-Chief a totally different atmosphere permeated our whole existence.

He went everywhere, saw everything, and possessed moreover that faculty—as wonderful as it is rare—of always remembering everyone he had ever met. His first great act was to make the acquaintance of all his officers at G.H.Q.; his next was to transfer G.H.Q. from Cairo to the Desert. A few months later he proceeded to capture Beer-

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sheba, Gaza, and Jerusalem. In March 1918 he had planned to give the Turks their final hiding, and only the turn of events in France deflected him from his object at that time. He therefore had temporarily to postpone what he ultimately put into such tremendous effect on September 19, 1918, and the few following weeks—Haifa, Nazareth, Beirut, Damascus, Tripoli, Homs, Aleppo.

Some day, perhaps, when the great events of 1918 can be seen in their proper perspective, the verdict of history may well be that the ultimate defeat of the Central Powers was due in no small measure to Lord Allenby's accomplishments of 1917 and 1918. Compare the Central Powers to a chair whose four legs may be designated Germany, Austria, Bulgaria, and Turkey. The Turk was the first to cry "capevi." The balance was thereupon upset and out came the Bulgar leg; the Austrian quickly followed suit, and then Germany. The words "difficult" or "impossible" could never have found a place in our Chief's vocabulary. When the famous 1918 operations commenced, the original scheme had been to make a twenty-mile advance on our whole front, but within the first twenty-four hours such success had attended the Chief's plans that our Cavalry had advanced some sixty miles, and were just south of Nazareth. So the Chief decided that Damascus would be his next immediate objective!

A great friend of our Directorate (Colonel E. Evans, C.B., C.M.G., D.S.O.) was round with us that night telling us of the new scheme of things. He was the D.Q.M.G.'s (General Campbell) deputy. General Campbell himself had not yet returned from leave in England; he was due back I think

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the next day. "I wonder," said Colonel Evans, "what the D.Q.M.G. will say when he gets back and learns the Chief is heading for Damascus? I am sure he will ask me if I protested, but it is not much use protesting when the Chief has made up his mind to go."

Subsequent events coincided with his forecast! But all was well—our M.T. Companies surpassed themselves in keeping the troops supplied, and no sooner was any sea-town (I cannot call them ports, for, Beirut excepted, hardly any other is worthy of the name) taken than up came supply ships from Port Said, so as to lessen so far as possible the ever-increasing lines of supply; and in this work we had throughout the most generous help from that very gallant Naval Officer Captain Eric Unwin, V.C., of *River Clyde* fame, who was P.N.T.O. in these days to our Force.

The Chief must have covered many hundreds of miles in his car every week during 1918, and especially so in the months of June, July, and August of that year. One or other of his A.D.C.s preceded him in another car to see the road was clear, but the Chief in a Rolls-Royce was not exactly an easy proposition to keep ahead of, and one usually saw the A.D.C. dashing along in a cloud of dust and every twenty yards or so landing down with a bump on the cushions and rebounding up again!

The Chief's method of calling his chauffeur's attention to stop or to take a particular turning was accomplished by methods akin to those employed by an elephant's mahout—one or more gentle (?) taps with the handle-end of his walking-stick on his chauffeur's shoulder.

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The Chief was a great lover of flowers, and many a time motoring along the Ludd–Jerusalem or Latrun–Ram Allah roads you might see him on the hill-sides with his arms full of those wonderful red anemones that grew in such profusion in the months of March and April in Palestine.

12. *Flowers and Fruit.*—From the middle of February to the end of April Palestine is hard to beat for wild flowers: the anemones—red predominating—cyclamen, tulips, jonquils, black irises, to say nothing of the almond and orange blossom, the latter more often than not grown in groves surrounded by mimosa hedges. And weren't those Jaffa oranges good! Two shillings a hundred was the current rate of exchange for them, and I don't think I missed eating at least one a day from November 1917 till mid-June 1918. And besides, there were apricots, mulberries, figs, to say nothing of the grapes in the Jordan Valley west of Jericho.

13. *Amusements.*—The 60th Division had a first-rate concert party—The Barnstormers—and they were very much in request in 1918. I believe many of them were London artistes; certain it is they were extremely good. We had much fun, too, in periodical jackal hunts; some of our Camel Transport people at an adjoining depot kept some "long" dogs, and of a Sunday afternoon we would sally forth. These "long" dogs—Seluggis they were—hunted entirely by view and not by nose; but they were almost uncanny the way they'd pick up the sight of a "jack" barely visible to one on horseback, and off they'd go. Give a "jack" a couple of hundred yards start and, provided he was not just digesting a heavy meal, you could usually reckon on a real good gallop for fifteen or twenty minutes.

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I particularly remember one such. Major E. A. Medley (D.A.D.T., M.T.) was out with us, and he was as gallant on a horse as he was ignorant of the noble animal. My Director had given him a mount—a safe conveyance enough, but he took hold a bit. We found our "jack," and away went our pack on excellent terms over a capital bit of country down by the Waddi Rubin. Presently from the ruck Medley on his mount was seen dashing to the front; his horse had spotted the "jack" and must needs see if he could not catch him. The pack was left behind, and there in front sailed along Medley a few yards short of the jack's brush (I don't vouch for the technical accuracy of this term as applied to a jackal!). Evidently the "jack" thought a joke's a joke, but to have a galloping horse about to drop a metaphorical depth-charge is beyond a joke, and so he turned sharp at right angles—so too did the horse. Not so Medley! He just shot forward like a bolt from the blue and turned the finest somersault I've ever seen, and landed stern first in a thorny bush. My sides were stiff from laughing for days afterwards.

The XXIst Corps down Jaffa way used to have rare good sport, and there were few keener hunting-folk in those days in our Force than Captain W. P. Armitage, A.P.M., and Lieutenant-Colonel Herring Cooper, A.D.S.T., XXIst Corps. I read in a recent number of *Blackwood's* a delightful article anent hunting in Palestine—it revived many dormant memories.

We contrived to get an occasional cricket match, and I only wish I had the score of one particular cricket match we played at the Horse Transport Depot at Ludd. My friend, Major H. B. Viney,

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M.C., who commanded this depot, provided all the gear, including the matting; he had converted a rough bit of land into an admirable parade ground, and except for a slight slope it made a very good cricket ground. I think my side won the match, our chief performers being E. R. Wilson (who for the past twenty-five years must surely rank as one of the finest of amateur slow-bowlers in English cricket), W. J. Whitty (an Australian Test Match cricketer), and an old Cambridge contemporary of mine, Major A. F. Leach Lewis, who at this time was a D.A.A.G. at G.H.Q. The last-named played a great innings.

14. *M.T. Lorry Drivers.*—Few people who have never driven a heavy lorry for hours on end can properly appreciate the strain of such an occupation; and when the man-power question became unduly acute in 1918, certain suggestions emanated that lorry-driving could quite well be done by men of a low medical category. To disprove the fallacy of this contention I collected certain of the disbelievers and took them on a lorry convoy from Jerusalem to Jericho and back—a twenty-mile run each way which starts from Jerusalem 3,000 feet above sea-level and ends at Jericho some 1,200 feet below sea-level. The day was perfect—for my purpose, at all events: boiling hot and just enough wind in those ghastly valleys to stir up all the dust, which I suppose lay on the roads for an average depth of not less than 6 inches. They came back eyes, nose, ears thick in dust, and schemes for substituting B class men for A class were never seriously raised again.

We were very strict on road discipline for M.T. convoys, and drivers who "broke the law" and

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didn't keep their proper intervals were given varying periods of intensive training at the Advanced Horse Transport Depot (designated by the ribald as the Advanced High Tension Depot). Such training primarily consisted in defaulting drivers marching up and down a white line of 50 yards—representing the interval that had to be maintained between moving lorries. The first month saw some fifty drivers on this course; the second, eleven; and the third five. It was never again necessary to resort to this experiment. Their road discipline was frankly excellent, and on occasions innumerable it called forth the approbation of many and various people—from the Chief downwards.

I can see now a convoy of four lorry Companies (sixty lorries each) coming down the last stage of that long winding road that runs from Damascus over the Lebanon into Beirut: they were just perfect.

Roads were narrow, and many had a considerable camber, and to prevent accidents lorries had to travel in the middle of the road whenever circumstances admitted. Consequently, whenever possible, look-out men travelled in the back of vehicles and pulled a communication cord that rang a bell fixed above the driver's head. One ring meant "pull to your right"; two, "stop," and so on.

A certain M.T. officer (Captain P. G. Grinling, M.C.), and a particularly good one too, told me one day he had questioned a driver as to what his bell-ringing signals were. "Oh!" said the man, "one ring means so and so, two—something else; but one long unending ring means Colonel B. is coming along." What these M.T. officers and men

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did is recorded elsewhere. I take off my hat to them one and all—they were just splendid.

15. *Comfort.*—It may well be urged by some who chance to read these random reminiscences that life at G.H.Q. in the E.E.F., Ismailia (1916), Cairo (1916–17), Kil-Abd (near Rafa) (1917), and Bir Salem (1918), represented the acme of comfort; and I for one would not contradict them. Certainly we were comfortable, and conversations I've had since those days with others who served in France, Macedonia, Mesopotamia, and East Africa leave me in no doubt that of all theatres of war during 1914–18, we in Palestine had the pick of them. We had our share of heat and cold, dust and rain, mosquitoes and sand-fly, but even so we must have been "better off."

One day in the summer of 1918 I was out at XXth Corps Headquarters at a place called El Fukari, not far from Shellal. The Corps Commander's mess hut, though very simply constructed, might well have been a summer-house on a river-side lawn on the Thames at Maidenhead. I couldn't refrain from comment; came the Corps Commander's reply: "A lot of people think that because you are on service you must therefore try to make your surroundings and all as Spartan as possible. There was never a greater mistake. Take General ——; he came up to my Headquarters to fight the Battle of ——, accompanied by an A.D.C., one blanket, and a tin of sardines. I offered him a tent, which he refused, and he just lay out on the sand with his ear to the telephone. He deserved to lose; no man can win battles when he is directing them under such conditions."

16. *A Personal Impression of Palestine.*—Many

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people have asked me what one's impression was of Palestine. Its wonderful simplicity; there is an indefinable sort of grandeur—a sort of unchanging solemnity; to me it seemed the personification of our Lord's teaching. I have seen that country at all hours of the day and night; it never seemed to change—spring or autumn, summer or winter.

The spirit of unchanging permanence seemed to pervade it even as it pervades our Lord's teaching. Its beauty was assuredly its simplicity There were but few pieces of scenery that held one captive: the view from the Mount of Olives eastward to the Jordan Valley and across the Dead Sea to the Mountains of Moab beyond was one; another, the view from north of Samaria on the Nablus–Jenin Road—to the east lay the rugged Jordan Valley, to the south just faintly discernible the minarets of Jerusalem, to the west, the Mediterranean all in its deep turquoise blue, and to the north the Plain of Esdraelon; and the third and last, that view of the Sea of Galilee from the top of the hills that lie to the westward of the town of Tiberias.

Jerusalem itself had no attraction for me whatsoever; it appealed to me only once, and that when motoring back late one evening from Jericho a terrific thunderstorm burst just as we reached Bethany, and it was indeed a sight to be remembered seeing the flashes of lightning playing over the city and its adjoining hills and valley, the while the thunder rolled and the rain came down in a solid mass.

17. *Jericho.*—Of Jericho I can say but little except that it was the dirtiest place I have ever

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seen. The Jordan ran some four miles to the eastward—a dirty brown stream which after a few hours of heavy rain became converted into a torrent. Some six miles to the south lay the Dead Sea. I have been over a good deal of it in a motor-boat; the buoyancy of the water, as is well known, is extraordinary. I have seen men bathing in it, literally squatting in the water with their hands round their knees and the water just lapping their necks as they bobbed up and down in it. Where the Jordan flows in at the north-east corner there always seemed to be battalions of gulls flying round, and every now and again you would see one swoop and come up with a fish—washed down by the river and turned into a "kipper" as soon as it came into contact with the salt water.

You could trace the flow of the Jordan for many miles into the Dead Sea, and you could feel the boat vibrating perceptibly as she came into contact with this incoming stream. And there it lies, its surface some 1,300 feet below sea-level, its bottom unplumbable, fed by a fresh-water river which in its ramifications from the south of the Lebanon runs through a lake, the Sea of Galilee, itself some 600 feet below sea-level, yet of fresh water; and its surroundings are indeed a barren desolate waste.

18. *Damascus.*—I made my first acquaintance with this famous city on October 2, 1918. We got there late at night. The place was in an awful state; dead or dying human beings or animals seemed everywhere, even in the river that ran through the town, and that appeared to be the city's main sewer. North of the town the retreating Turks and Germans had been caught by our

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encircling troops and just mown down. It was a repetition of the scene that was enacted along the Tul-Keram–Samaria Road on September 19, when the retreating enemy got bombed and machine-gunned by our aeroplanes along a narrow defile.

Thanks to the good offices of a friend of mine, Major Frank Stirling (who was one of that small band of British officers that did such yeoman work for us with the Sherifian Army), I got a guide to take us round. Our first place to visit being some brass-works, we wended our way through a series of the narrowest and most noisome streets I have ever traversed; through the degrading purlieus of the prostitutes' quarter, filled as it seemed to overflowing with the flotsam and jetsam of humanity, from poor little girls of tender years to haggard, wrinkled beings that barely looked human in their utter demoralisation—and so, on to the brass-works.

That done, we came back by another route, and I went to a large Syrian store to purchase some silks and table-cloths. The manager of the shop—Syrian—spoke good English. I found when I'd completed my purchases that I'd taken more than I had cash to pay with, so I told him I would do without so-and-so, and explained why. He protested and said, "Sir, you give me cheque." "I can't do that, as I haven't got my cheque-book with me," I replied. "Then, sir, I tell you what. I have in Cairo a brother who has a shop like mine here—he is opposite Shepheard's Hotel. I give you bill, and you pay him—that be all right." "But," said I, "this is very confiding of you. How do you know I will pay?" I added, laughing. "Sir," came the answer, "you are a British officer."

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I did as he asked, and, thinking the courtesy he had shown me might already have been extended to others, I enquired if it was so. "Oh yes," he said, and gave me a list—some of the accounts were for sums between £50 and £80. I undertook to act as postman for him and forwarded a letter to his brother in Cairo, containing this list of those who had made purchases and had promised to pay by cheque. Some weeks later I was in Cairo and called in to see my Damascus Syrian's Cairo brother. He nearly embraced me, for he had not heard a word of his brother since August 1914—over four years—and told me that every one of the accounts had been paid.

It is no small honour the world over to have the privilege of being a British officer.

19. *Beirut.*—Starvation was rampant amongst the poorer classes of Beirut when we occupied the town in early October. The XXIst Corps under General Bulfin did wonders to ameliorate conditions. The destitute poor used to make a regular practice of taking their poor starving little children and placing them on the doorsteps of rich people's houses in the hope that food might be forthcoming. It was pitiable to hear their cries. I'm afraid that more often than not these poor little souls never got many scraps of any food that kind Samaritans may have handed out, for the parents generally lurked in the background and swooped like hungry vultures on any eatable that was given. In fact they used their children's dying cries as a decoy for themselves. Starvation is an appalling thing to see—it is only exceeded by thirst, so far as my limited experience goes.

20. *Aleppo.*—Aleppo—or rather Muslimiyeh Junc-

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tion, some ten miles to the north—marked the end of our advance on October 26, and also my peregrinations.

It is a wonderful experience to look back on, for at one time or another one traversed practically every road from Gaza–Beersheba in the south to Aleppo in the north, besides Es Salt in Transjordania.

Years ago I remember a certain General lecturing at the Curragh and pointing out the value of comparing distances in military operations in a foreign country with equal distances in our own country. As a case in point, Gaza–Beersheba was approximately 30 miles, a distance much the same as London to Reading; and so too in Lord Allenby's final great advance from the general line, Jaffa–Ludd–Ram Allah–Jericho to Aleppo, the distance as the roads go (not as the crow flies) is almost equal to the distance by rail from London to Aberdeen, and that distance was covered in 36 days; 75,000 prisoners were captured (of whom over 200 officers and 3,500 other ranks were Germans or Austrians), 360 guns, 800 machine guns and a great quantity of other war material.

The total area of operations must have been vast; in the first three phases alone it extended over 2,500 square miles. The final surrender of Aleppo was "called on" by a gallant subaltern, attached, I believe, to the 15th (Imperial Service) Cavalry Brigade of the 5th Cavalry Division, who proceeded into the city under a flag of truce; the flag of truce consisting of the aforesaid subaltern's bath-towel tied to the end of a polo stick! I subsequently took a photograph of him and his flag and his Ford van!

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21. *Finis.*—Space does not permit, nor am I in any way competent, to record a thousand and one other experiences that came my way in the years 1916–18. I have merely attempted to touch on certain salient personalities and episodes. We officers who served together in the Royal Army Service Corps of the Egyptian Expeditionary Force still hold together. We have an annual dinner in London every November and generally muster a hundred strong, and our card-index has the addresses of well over a thousand. My friend Sir George Shead runs this present part of our post-war organisation. There are many I would like to have mentioned in this disconnected series of reminiscences, but to do so 'twould take a book; may I just refer to a very few with whom I had much to do, and whom I've not already referred to elsewhere.

Lieutenant-Colonel John Murray, who commanded the Base Horse Transport Depot at Kantara; Major H. B. Viney, M.C., the Advanced Horse Transport Depot, Ludd; Alec Clarkson and Morrison, who were both my chauffeurs at different times and who kept and drove their cars in a way beyond all praise; Pullen, who was in charge of cars at G.H.Q. where he exercised tact sufficient to have persuaded a wasp to let you pull out his sting; B. W. Nicholson, who would be one of my first selections on any job that needed a man who would never fail you; old Stubbs—our mess cook—who, no matter at what hour you started or returned, always had a good breakfast or dinner ready for you; Dickinson, the best horse-master I've ever met—he'd have put condition on to a stone let alone a 17-hand flat-sided Argentine

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mule; Sergeant-Major Hall, a confidential clerk who was worth his weight in gold.

I hope all these and the many others with whom my lot was cast in the days of the E.E.F. will deal as kindly with this inadequate record of what they strove for and accomplished as I hope they may with the many faults and shortcomings, particularly that of a too limited patience, of the present writer.

No man can reasonably expect twice in a lifetime to have the luck and privilege of finding his lot cast in such pleasant and interesting surroundings, human and otherwise, as fell to my fate in the Egyptian Expeditionary Force; and so I am doubly grateful in that I have had that privilege once.

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PART V

APPENDIX I

R.A.S.C. OFFICERS AND OTHER RANKS

On September 19, 1918, the approximate strength of the Egyptian Expeditionary Force was:

British	226,900
Indians	111,800
Egyptians	128,950
Total	467,650
Horses	74,800
Mules	89,100
Camels	85,000
Donkeys	11,000
Total	159,900

And the average daily tonnage of supplies despatched by rail from Egypt (Kantara) to Palestine was:

	Tons.
In June 1918	1,615
„ July 1918	2,026
„ August 1918	2,317
„ September 1918	1,782

The officers of the Royal Army Service Corps in the E.E.F. were divided into four main branches, viz. Mechanical Transport, Horse Transport, Supply, and Camel Transport, and the number of officers so employed with these branches at the date when the Turks laid down their arms was as under:

Mechanical Transport	278
Horse Transport	174
Supply	256
Camel Transport	284

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In addition there were the following:

Supply and Transport Directorate	28
Staff of G.H.Q., Corps, Divisions, etc.	19
Attached to Infantry	76
Attached to R.A.F.	12
Duty with O.E.T.A.	17
Duty with Egyptian Army	2
Miscellaneous (non-R.A.S.C. duties)	8
	1,094

Composition of Officers in the E.E.F.

The total of 1,094 officers comprised the following:

Regulars	89
Indian S. and T. Corps	88
Territorials	110
Australians	49*
Anglo-Egyptians	51
New Army	788
Regular Quartermasters	29
	1,094

* Serving with C.T.C.

Civil Professions

Of the 168 recorded professions followed by New Army officers in civil life, the chief were as under:

Accountants (includes 11 Chartered)	50
Assurance and Insurance	16
Auctioneers and Valuers	5
Agents and Travellers	59
Bankers, Bank Managers, etc.	19
Brewers and Distillers	11
Brokers	16
Civil Servants	85
Clerks	78
Clergymen	8
Commercial Directors and Secretaries	22
Contractors and Builders	18
Egyptian Ministry Officials	20
Engineers	154
Farmers, Graziers, Cattle and Sheep Men	75

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Journalists and Lecturers	11
Manufacturers	16
Merchants	51
Planters	15
Schoolmasters and Educational Officials	82
Solicitors	30
Students	21
Surveyors	10
Theatrical Managers and Actors	6
	768

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ARMY SERVICE CORPS

STRENGTH OF OTHER RANKS IN THE EGYPTIAN EXPEDITIONARY FORCE

	British.								Indians.	Egyptians.				Grand Total.
	H.T. Driver Class.	M.T. Driver Class.	Artificers.	Bakers.	Butchers.	Clerks.	Loaders.	Total.		E.A., H.T., Drivers.	Egyptian Drivers.	Egyptian Camel Drivers.	Total.	
(1) Horse Transport .	4,705	—	685	—	—	—	—	5,390	2,725	3,677	4,799	—	8,476	16,591
(2) Supply . .	—	—	—	734	1,354	1,752	433	4,273	—	—	—	—	—	4,273
(3) Mechanical Transport .	—	6,558	1,298	—	—	—	—	7,856	—	—	977	—	977	8,833
(4) Camel Transport .	218	—	—	—	—	20	—	238	—	—	—	19,423	19,423	19,661
(5) Donkey Transport	56	—	—	—	—	4	—	60	—	—	—	3,868	3,868	3,928
Total . .	4,979	6,558	1,983	734	1,354	1,776	433	17,817	2,725	3,677	5,776	23,291	32,744	53,286

6/12/18.

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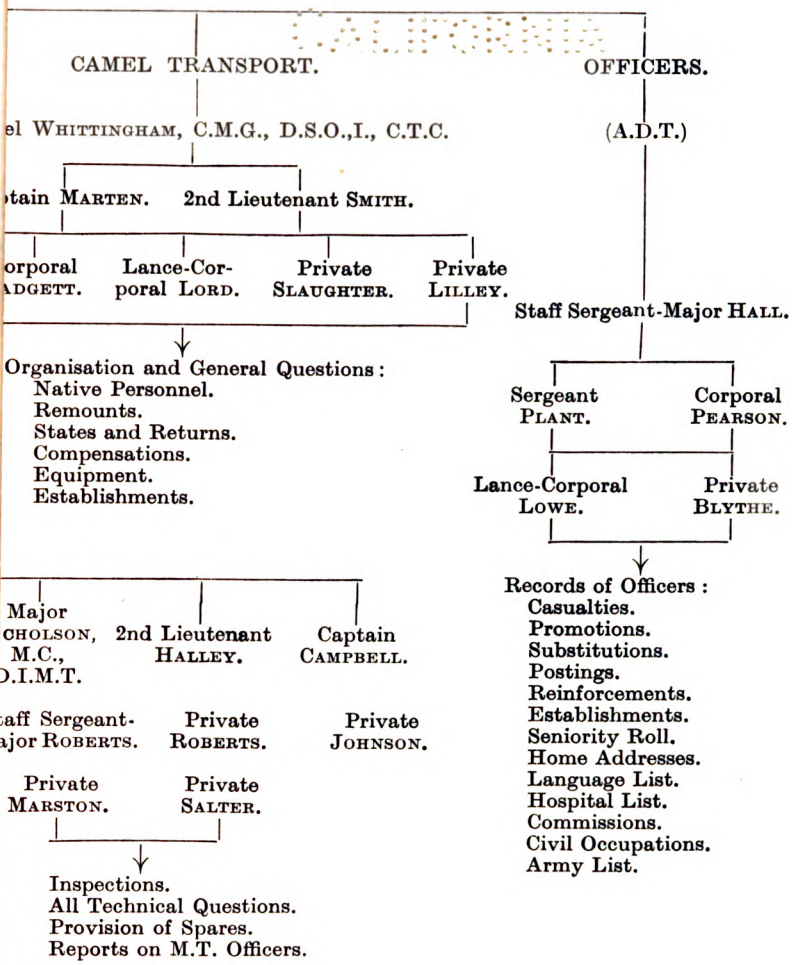

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APPENDIX II

ALLOTMENT OF ROYAL ARMY SERVICE CORPS OFFICERS IN THE EGYPTIAN EXPEDITIONARY FORCE, DECEMBER 1918

SUPPLY AND TRANSPORT DIRECTORATE

D.S.T.. . .	Brig.-General (T.)	G. F. Davies, C.B., C.M.G.
A.D.T. . .	Bt. Lieut.-Colonel	G. E. Badcock, D.S.O.
A.D.S. . .	Lieut.-Colonel (T.)	J. H. Morris, D.S.O.
D.A.D.T. . .	A/Major	R. C. Haddon.
D.A.D.T. (M.T.) .	Bt.-Major	E. A. Medley.
D.A.D.T. (Indian)	A/Major	G. V. Comyn, M.C., S.T.C. (leave U.K.).
D.A.D.S. (Canteens)	A/Major	G. H. Simpson, O.B.E.
D.A.D.S. . .	Temp. Major	J. Fox.
D.A.D.S.T. . .	Major (T.F.)	A. Gillibrand, D.S.O.
Office of A.D.S. .	Temp. Captain	R. P. C. Gotto.
Office of A.D.S. .	Quartermaster and Captain	B. R. Witt.
O. i/c. States .	Quartermaster and A/Major	J. Sewell.
O. i/c. Supply Personnel .	Quartermaster and Capt.	J. S. W. Sidwell.

2ND ECHELON

D.D.S.T. . .	Colonel (T.)	W. Elliott, D.S.O.
D.A.D.S. . .	Temp. Major	K. M. Beaumont, D.S.O. (Hosp.).
D.A.D.S.T. . .	Major (T.)	L. A. L. Carter, D.S.O.
Office of D.A.D.S. (Sub.) . .	Temp. Lieut.	K. G. Holland.
C.R.O. . .	Temp. Capt.	H. J. Bartlett.
C.R.O. . .	A/Captain	D. W. G. Coley.

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PALESTINE LINES OF COMMUNICATION

A.D.S.T. . .	Temp. Lieut.-Colonel	J. C. Brown, D.S.O.
D.A.D.S.T. (Canal Zone) . .	A/Major	F. R. Way, T.F.
D. A. D. S. T. (Forward Area) .	A/Major	H. B. Viney, M.C.
Regt. Asst. to A. D. S. T., P.L. of C. . .	Temp. Capt.	H. Morrell.

3RD ECHELON

O. i/c. Records .	Lieut.-Colonel	C. W. Grey (leave South Africa).
Assistant . .	Quartermaster and Capt.	G. R. Rowe.

LABOUR DIRECTORATE

D.L. . . .	Brig.-General (T.)	R. C. Jellicoe, D.S.O.
D.A.D.L. . .	Temp. Major	J. R. Alderson.
D.A.D.L. . .	Temp. Major	J. T. Hogarth.
D.A.D.L. . .	Temp. Major	P. D. Power.

H.Q., DELTA AREA

Confidential Clerk to G.O.C.—Staff Captain	Quartermaster and Capt.	A. E. Dunstan.

XXTH ARMY CORPS

A.D.S.T. . .	Lieut.-Colonel (T.)	P. C. De la Pryme, D.S.O.
Reg. Asst. . .	A/Capt.	H. R. Panckridge, I.A.R.O. (Hosp.).
S.M.T.O. . .	Temp. Major	A. T. Binney.
Adjt. to S.M.T.O.	A/Capt.	A. Clarkson.
O.C., A.S.C., H.A.	Major	M. Boyle, T.F.
Adjt. to do. .		

XXIST ARMY CORPS

A.D.S.T. . .	Bt. Lieut.-Colonel	W. W. Herring Cooper, D.S.O.
Regt. Asst. . .	Temp. Capt.	P. S. Horn.
S.M.T.O. . .	A/Major	L. W. Cox, M.C.
Adjutant . .	A/Capt.	E. H. Burbridge, M.C.
O.C., A.S.C., H.A.	A/Major	P. M. Sanders.
Adjt. to do. .	Temp. 2nd Lieut.	P. G. Harger.

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DESERT MOUNTED CORPS

A.D.S.T.	Lieut.-Colonel	W. Stansfield, D.S.O., A.I.F.
D.A.D.S.T.	Major	F. P. Howell-Price, A.I.F.
S.M.T.O.	A/Major	E. S. Baring-Gould.
Adjutant	A/Capt.	W. E. Green.

Staff

G.H.Q., 1st Echelon

D.A.Q.M.G.	Major	G. A. Sykes, O.B.E., T.F.

Force-in-Egypt

A.A. and Q.M.G.	Bt. Lieut.-Colonel	C. W. Horton, D.S.O.

XXIst Corps

D.A.Q.M.G.	Temp. Major	W. A. Halliwell, T.F.

10th Division

A.A. and Q.M.G.	Bt. Lieut.-Colonel	E. R. O'Hara, C.M.G.

4th Cavalry Division

A.A. and Q.M.G.	Bt. Lieut. Colonel (T.)	A. C. Robinson, D.S.O.

XXTH CORPS TROOPS TRAIN

(1042 H.T. Coy. A.S.C.)

O.C. (Major)	Major (A.)	C. H. Brown (T.F.).

Transport

Sub.	Temp. 2nd Lieut.	C. J. Lee Steere.
Sub.	Temp. 2nd Lieut.	H. E. Hazley.
Sub.	Temp. 2nd Lieut.	G. S. Seaton.

Supply

Captain S.O.	A/Capt.	D. B. Hardy.
Sub. R.O.	Temp. 2nd Lieut.	S. H. Tute.

XXIST CORPS TROOPS TRAIN

(1043 H.T. Coy., A.S.C.)

O.C. (Major)	Temp. Major	J. C. O'Kell.

Transport

Sub.	Temp. Lieut.	H. T. Whittaker.
Sub.	Temp. 2nd Lieut.	A. S. Pankhurst.
Sub.	Temp. 2nd Lieut.	L. H. Stapleton (Det. at Surafend).
Sub.	Temp. 2nd Lieut.	C. B. Smith.
	Temp. Lieut.	H. W. Deverell.

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Supply

Capt. S.O. . .	Temp. Capt.	R. L. Knight.
Sub. R.O. . .	Temp. Lieut.	R. F. Hill.

4th CAVALRY DIVISIONAL TRAIN: SYRIA

HEADQUARTERS

Transport

O.C. Train . .	Lieut.-Colonel	A/Lieut.-Col. J. W. B. Landon, D.S.O., T.F.
Adjutant . .	Capt.	A/Capt. W. Morrison.
Interpreter . .		

Supply

S.S.O. . .	Major	A/Major G. Davis, T.F.

HEADQUARTERS COMPANY (999 COMPANY)

Transport

O.C. . . .	Capt.	Capt. D. P. Sandilands.
T.O. . . .	Sub.	Temp. 2nd Lieut. E. T. Vernon.

Supply

S.O. . . .	Capt.	A/Capt. D. Logan.
R.O. . . .	Sub.	Temp. 2nd Lieut. C. A. J. Garland.

No. 2 COMPANY (1000 COMPANY)

Transport

O.C. . . .	Capt.	A/Capt. J. Charrington, T.F.
T.O. . . .	Sub.	Temp. 2nd Lieut. G. R. Horton.

Supply

S.O. . . .	Capt.	A/Capt. A. Richards, I.A.R.O.
R.O. . . .	Sub.	Temp. Lieut. E. H. Porcher.

No. 3 COMPANY (1001 COMPANY)

Transport

O.C. . . .	Capt.	Temp. Capt. S. H. Rothschild.
T.O. . . .	Sub.	Temp. 2nd Lieut. R. Lamb.

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Supply

S.O. . . .	Capt.	Temp. Capt. G. G. Simons.
R.O. . . .	Sub.	Temp. 2nd Lieut. C. H. Watson.

No. 4 Company (1002 Company)

Transport

O.C. . . .	Capt.	R. Capt. P. Phillips, T.F.
T.O. . . .	Sub.	Temp. 2nd Lieut. H. Blackshaw.

Supply

S.O. . . .	Capt.	A/Capt. W. S. Law.
R.O. . . .	Sub.	Temp. 2nd Lieut. E. S. Evans.

5TH CAVALRY DIVISIONAL TRAIN: SYRIA

Headquarters

Transport

O.C. Train . .	Lieut.-Colonel	Lieut.-Colonel (T.) D. W. Cunningham.
Adjutant . .	Capt.	A/Capt. W. B. S. Deverell.
Interpreter . .	Temp. 2nd Lieut.	F. Nathan (L.P.O., Aleppo).
	Temp. 2nd Lieut.	E. Eames.

Supply

S.S.O. . .	Major	Temp. Major H. S. Chamberlain (Hosp.).

Headquarters Company (1103 Company)

Transport

O.C. . . .	Capt.	Capt. N. J. Dawson, T.F. (and A/S.S.O.).
T.O. . . .	Sub.	Temp. 2nd Lieut. H. N. Boam.

Supply

S.O. . . .	Capt.	Temp. Capt. S. R. Lawrenson.
R.O. . .	Capt. or Sub.	Temp. Lieut. F. W. Foulger.

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No. 2 Company (1044 Company)

Transport

O.C. . . .	Capt.	A/Capt. W. N. Buckley, T.F.
T.O. . . .	Sub.	Temp. 2nd Lieut. J. McI. White.

Supply

S.O. . . .	Capt.	Temp. Capt. G. M. Drury.
R.O. . . .	Capt. or Sub.	Temp. 2nd Lieut. F. H. Felgate.

No. 3 Company (1104 Company)

Transport

O.C. . . .	Capt.	Temp. Capt. S. H. Flinn.
T.O. . . .	Sub.	Temp. 2nd Lieut. P. D. Grant-Adamson.

Supply

S.O. . . .	Capt.	T. Capt. A. C. Robinson.
R.O. . . .	Capt. or Sub.	Lieut. A. Hamilton, T.F.

No. 4 Company (1105 Company)

Transport

O.C. . . .	Capt.	A/Capt. S. H. Heath.
T.O. . . .	Sub.	Temp. Lieut. L. Howe.

Supply

S.O. . . .	Capt.	Lieut. S. E. Jenkins, I.A.R.O.
R.O. . . .	Capt. or Sub.	Temp. Lieut. J. G. Worth.

3RD INDIAN DIVISIONAL TRAIN: PALESTINE

Headquarters

Transport

O.C. Train . .	Lieut.-Colonel	Bt. Lieut.-Colonel J. W. Sherrard, S.T.C.
Adjutant . .	Capt.	A/Capt. S. E. Simmons, I.A.R.O.

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Supply

S.S.O. . . .	Major	Bt. Major C. A. M. Tennant, S.T.C.
R.O. . . .	Capt.	Lieut. J. C. Williams, I.A.R.O.
R.O. . . .	Sub.	Temp. 2nd Lieut. H. C. Courtney, R.A.S.C.

HEADQUARTERS COMPANY (No. 1 COMPANY)

Transport

O.C. . . .	Major	Capt. J. A. Burlton-Bennett, S.T.C.
T.O. . . .	Sub.	Temp. 2nd Lieut. C. Clark, R.A.S.C.
T.O. . . .	Sub.	Temp. 2nd Lieut. D. C. C. Gollan, R.A.S.C.

Supply

S.O. . . .	Capt.	Capt. A. Elms, T.F.

No. 2 COMPANY (No. 2 COMPANY)

Transport

O.C. . . .	Capt.	A/Capt. G. Leitch, S.T.C.
T.O. . . .	Sub.	Temp. 2nd Lieut. A. G. Skillings, R.A.S.C.

Supply

S.O. . . .	Capt.	Temp. Lieut. H. A. Pearman, I.A.R.O.

No. 3 COMPANY (No. 3 COMPANY)

Transport

O.C. . . .	Capt.	A/Capt. H. S. Hodges, I.A.R.O.
T.O. . . .	Sub.	Temp. 2nd Lieut. H. L. Crowe, R.A.S.C.

Supply

S.O. . . .	Capt.	A/Capt. F. Mulvey, R.A.S.C.

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No. 4 Company (No. 4 Company).

Transport

O.C. . . .	Capt.	A/Capt. G. B. O'Connor I.A.R.O.
T.O. . . .	Sub.	Temp. 2nd Lieut. A. Harwood, R.A.S.C.

Supply

S.O. . . .	Capt.	A/Capt. H. Crawford, I.A.R.O.

7TH INDIAN DIVISIONAL TRAIN : SYRIA

Headquarters

Transport

O.C. Train . .	Lieut.-Colonel	Bt. Lieut.-Colonel W. Brown, S.T.C. (leave U.K.).
Adjutant . .	Capt.	A/Capt. H. L. J. Jolley, S.T.C.

Supply

S.S.O. . . .	Major	Major S. L. Wace, S.T.C.
R.O. . . .	Capt.	A/Capt. W. H. Thomas, R.A.S.C.
R.O. . . .	Sub.	Temp. 2nd Lieut. W. A. Godfrey, R.A.S.C.

Headquarters Company (No. 5 Company)

Transport

O.C. . . .	Major	A/Major G. V. C. Hughes, M.C., S.T.C.
T.O. . . .	Sub.	Temp. Lieut. P. R. Hendrie, R.A.S.C.
T.O. . . .	Sub.	Temp. 2nd Lieut. D. J. Stewart, R.A.S.C.

Supply

S.O. . . .	Capt.	A/Capt. W. O. Sherwood, I.A.R.O.

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No. 2 Company (No. 6 Company)

Transport

O.C. . . .	Capt.	Temp. Capt. A. G. Pritchard, R.A.S.C.
T.O. . . .	Sub.	Temp. 2nd Lieut. A. H. Johnstone, I.A.R.O.

Supply

S.O. . . .	Capt.	A/Capt. A. P. J. West, I.A.R.O.

No. 3 Company (No. 7 Company)

Transport

O.C. . . .	Capt.	Temp. Capt. C. Parker, R.A.S.C.
T.O. . . .	Sub.	Lieut. E. H. Pochin, T.F., R.A.S.C.
	Sub.	Temp. 2nd Lieut. C. A. Barrett, R.A.S.C.

Supply

S.O. . . .	Capt.	A/Capt. O. A. Harman, M.C., I.A.R.O.

No. 4 Company (No. 8 Company)

Transport

O.C. . . .	Capt.	A.C. and Hon. Lieut. E. G. Bingham, M.C., S.T.C.
T.O. . . .	Sub.	Temp. 2nd Lieut. W. H. Haynes, R.A.S.C.

Supply

S.O. . . .	Capt.	Temp. Lieut. H. G. C. Dowden, R.A.S.C.

10TH (IRISH) DIVISIONAL TRAIN : CAIRO

Headquarters

Transport

O.C. Train . .	Lieut.-Colonel	A/Lieut.-Colonel A. B. P. Pereira, D.S.O.
Adjutant . .	Capt.	A/Capt. J. P. Stratton, T.F
Interpreter . .		Temp. Lieut. N. I. Mindel.

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Supply

S.S.O. . .	Major	Capt. A. MacDonald, T.F.
R.O. . . .	Capt.	A/Capt. H. Pemberton.
R.O. . . .	Sub.	

HEADQUARTERS COMPANY (No. 475 COMPANY)

Transport

O.C. . . .	Major	Temp. Major R. S. Swallwell.
T.O. . . .	Sub.	Temp. 2nd Lieut. C. J. Allen.
T.O. . . .	Sub.	Temp. 2nd Lieut. J. L. Trustram.

Supply

S.O. . . .	Capt.	A/Capt. A. A. Gregory.

No. 2 COMPANY (476 COMPANY)

Transport

O.C. . . .	Capt.	A/Capt. H. M. Simpson, T.F.
T.O. . . .	Sub.	Temp. 2nd Lieut. W. Moore.

Supply

S.O. . . .	Capt.	A/Capt. J. M. Broad, T.F.

No. 3 COMPANY (477 COMPANY)

Transport

O.C. . . .	Capt.	Capt. H. S. Thynne, T.F.
T.O. . . .	Sub.	Temp. 2nd Lieut. J. McLachlan.

Supply

S.O. . . .	Capt.	A/Capt. C. T. Cox.

No. 4 COMPANY (478 COMPANY)

Transport

O.C. . . .	Capt.	Temp. Capt. N. D. Hennessey.
T.O. . . .	Sub.	Temp. 2nd Lieut. J. W. Yelverton.

Supply

S.O. . . .	Capt.	Temp. 2nd Lieut. J. T. Magor.

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53RD (WELSH) DIVISIONAL TRAIN: ALEXANDRIA

HEADQUARTERS

Transport

O.C. Train . .	Lieut.-Colonel	A/Lieut.-Colonel W. G. Fookes.
Adjutant . .	Capt.	Temp. Capt. R. G. R Saulez.
Interpreter . .		Temp. Lieut. T. L. Gordon.

Supply

S.S.O. . .	Major	A/Major H. M. Gregory, T.F.
R.O. . . .	Capt.	
R.O. . . .	Sub.	

HEADQUARTERS COMPANY (No. 246 COMPANY)

Transport

O.C. . . .	Major	A/Major J. E. Clark, T.F.
T.O. . . .	Sub.	Temp. 2nd Lieut. J. W. Goldsmith.
T.O. . . .	Sub.	Temp. 2nd Lieut. F. G. Moon.

Supply

S.O. . . .	Capt.	Capt. J. D. McDiarmid, T.F.

No. 2 COMPANY (No. 247 COMPANY)

Transport

O.C. . . .	Capt.	A/Capt. R. C. Jennings, T.F.
T.O. . . .	Sub.	Temp. 2nd Lieut. W. F. Palles.

Supply

S.O. . . .	Capt.	Capt. C. E. P. Long, T.F.

No. 3 COMPANY (No. 248 COMPANY)

Transport

O.C. . . .	Capt.	Temp. Capt. F. D. Murray.
T.O. . . .	Sub.	Temp. 2nd Lieut. H. L. Beamish.

Supply

S.O. . . .	Capt.	Temp. Lieut. J. McNally.

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No. 4 Company (No. 249 Company)

Transport

O.C. . . .	Capt.	A/Capt. G. G. Astell.
T.O. . . .	Sub.	Temp. 2nd Lieut. B. Sharpe.

Supply

S.O. . . .	Capt.	Temp. Capt. C. E. Mott.

54TH (EAST ANGLIAN) DIVISIONAL TRAIN: CAIRO

Headquarters

Transport

O.C. Train . .	Lieut.-Colonel	Lieut.-Colonel H. D. Russell, D.S.O.
Adjutant . .	Capt.	A/Capt. A. C. Demetriadi.
Interpreter . .		Temp. Lieut. C. Rofe.

Supply

S.S.O. . .	Major	Major O. W. H. Briggs, T.F.
R.O. . . .	Capt.	
R.O. . . .	Sub.	Temp. 2nd Lieut. E. H. N. Ryde.

Headquarters Company (No. 921 Company)

Transport

O.C. . . .	Major	Major (T.) H. P. C. Verschoyle.
T.O. . . .	Sub.	Temp. 2nd Lieut. L. A. Solomon.
T.O. . . .	Sub.	Temp. 2nd Lieut. E. D. J. Taunt.

Supply

S.O. . . .	Capt.	A/Capt. J. S. Allen, T.F.

No. 2 Company (No. 922 Company)

Transport

O.C. . . .	Capt.	A/Capt. D. McFarlane, T.F.
T.O. . . .	Sub.	Lieut. G. D. Ross, T.F.

Supply

S.O. . . .	Capt.	Capt. V. Deacon, T.F.

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No. 3 Company (No. 923 Company)

Transport

O.C.	Capt.	Capt. H: Hime, T.F.
T.O.	Sub.	Temp. 2nd Lieut. T. Town.

Supply

S.O.	Capt.	Capt. R. C. Horton.

No. 4 Company (No. 924 Company)

Transport

O.C.	Capt.	A/Capt. A. Soutar, T.F.
T.O.	Sub.	Temp. 2nd Lieut. R. J. A. Strudwick.

Supply

S.O.	Capt.	A/Capt. J. C. Kent.

60TH (LONDON) DIVISIONAL TRAIN: ALEXANDRIA

Headquarters

Transport

O.C. Train	Lieut.-Colonel	Lieut.-Colonel J. G. Needham, D.S.O.
Adjutant	Capt.	Temp. Capt. N. H. P. Somerset.
Interpreter		Temp. 2nd Lieut. E. Robson.

Supply

S.S.O.	Major	A/Major F. Ball, M.C., T.F.
R.O.	Capt.	
R.O.	Sub.	

Headquarters Company (No. 517 Company)

Transport

O.C.	Major	Major C. F. Lucas.
T.O.	Sub.	Temp. Lieut. A. R. Wilson.
T.O.	Sub.	Temp. 2nd Lieut. A. J. Simmonds.

Supply

S.O.	Capt.	A/Capt. W. Walker, T.F.

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No. 2 Company (No. 518 Company)

Transport

O.C.	Capt.	A/Capt. R. H. Davies, T.F.
T.O.	Sub.	Lieut. F. A. H. Henley, T.F.

Supply

S.O.	Capt.	A/Capt. J. D. Rogers, T.F.

No. 3 Company (No. 519 Company)

Transport

O.C.	Capt.	Temp. Capt. H. C. Savage.
T.O.	Sub.	Temp. Lieut. N. J. Davis.

Supply

S.O.	Capt.	A/Capt. J. H. Johnson.

No. 4 Company (No. 520 Company)

Transport

O.C.	Capt.	A/Capt. A. H. Newman.
T.O.	Sub.	Temp. Lieut. T. G. Potts.

Supply

S.O.	Capt.	A/Capt. W. H. Whittington, T.F.

75TH DIVISIONAL TRAIN: KANTARA

Headquarters

Transport

O.C. Train	Lieut.-Colonel	Lieut.-Colonel E. W. Caddick, T.F.
Adjutant	Capt.	Capt. W. E. Allen, T.F.
Interpreter		Temp. Lieut. G. W. F. Bellward.

Supply

S.S.O.	Major
R.O.	Capt.
R.O.	Sub.

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HEADQUARTERS COMPANY (No. 925 COMPANY)

Transport

O.C.	Major	A/Major A. H. Davy, T.F.
T.O.	Sub.	Temp. 2nd Lieut. A. G. Dovey.
T.O.	Sub.	Temp. 2nd Lieut. G. C. P. Berryman.

Supply

S.O.	Capt.	Capt. H. O. Young, T.F.

No. 2 COMPANY (No. 926 COMPANY)

Transport

O.C.	Capt.	Temp. Capt. J. R. Tafft.
T.O.	Sub.	Temp. 2nd Lieut. N. E. Purcell.

Supply

S.O.	Capt.	A/Capt. W. S. Harrington.

No. 3 COMPANY (No. 927 COMPANY)

Transport

O.C.	Capt.	Temp. Capt. T. F. Coke.
T.O.	Sub.	Temp. Lieut. R. P. Reid, T.F.

Supply

S.O.	Capt.	A/Capt. J. Byers.

No. 4 COMPANY (No. 928 COMPANY)

Transport

O.C.	Capt.	A/Capt. W. C. Heas.
T.O.	Sub.	Temp. 2nd Lieut. A. J. Wintle.

Supply

S.O.	Capt.	Capt. F. V. Pogson, S.T.C.

XXTH (GARHWAL) INFANTRY BRIGADE TRAIN

(No. 1106 H.T. Company, R.A.S.C.)

O.C.	Capt.	
T.O.	Sub.	Temp. Lieut. S. B. Smith.
S.O.	Capt.	A/Capt. N. M. George, I.A.R.O.

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STATION TRANSPORT OFFICER: BELBEIS

Capt. A. F. Collinson, T.F.

OFFICERS AWAITING EMBARKATION UNDER EIGHTEEN MONTHS' RELIEF SCHEME

Temp. 2nd Lieut. L. C. de L. Armstrong (Advanced M.T. Depot, Kantara).

OFFICERS AWAITING EMBARKATION AS "DEMOBILISERS" AND "PIVOTAL MEN," BASE H.T. DEPOT, KANTARA

Temp. Major	M. G. Holmes.
Temp. Capt.	F. S. Butter.
Temp. Lieut.	E. J. Gaines.
Temp. 2nd Lieut.	F. G. Rydon.
Temp. 2nd Lieut.	T. H. Clements.

BASE HORSE TRANSPORT DEPOT: KANTARA

(No. 187 H.T. Company, R.A.S.C.)

Lieut.-Colonel .	Bt. Lieut.-Colonel	J. Murray.
Adjutant . .	A/Capt.	W. Thomas (T.F.)
Capt. . . .	A/Capt.	R. H. Pitts.
Sub. . . .	Lieut.	E. Holland (R.M.F.), M.C.
Sub. . . .	Temp. 2nd Lieut.	W. G. Cheshire.
Sub. . . .	Temp. 2nd Lieut.	E. St. C. Archdall.
Sub. . . .		

ATTACHED

Horse Transport

Temp. 2nd Lieut. . .	L. H. W. Sampson.
Temp. 2nd Lieut. . .	R. L. Morphy.
Temp. Lieut. . .	G. D. Thomson.
Temp. Capt. . .	R. R. H. Saunders. "D."
Temp. 2nd Lieut. . .	S. S. Barnard.
Temp. 2nd Lieut. . .	D. Woods.
Temp. 2nd Lieut. . .	C. L. Wace.
Temp. Capt.. . .	W. C. D. Cooper.
Temp. Lieut. . .	J. E. Madden.
Temp. Lieut. . .	L. A. R. M. de V. Ponthien.

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Supply

Temp. 2nd Lieut.	W. M. Thomas.
Temp. 2nd Lieut.	E. W. G. Gogay.
Temp. Capt.	A. Bedale. "D."
Temp. 2nd Lieut.	P. Lacy. "D."
A/Capt.	G. W. Gill (T.F.).
Temp. Lieut.	B. E. R. Pearse.
Temp. 2nd Lieut.	F. Lawrence.
Temp. Lieut.	C. R. Perry.

ON LEAVE

Temp. Lieut.	F. Lewis.
Lieut.	G. F. Polson (T.F.).
Temp. 2nd Lieut.	S. F. Skiff.
A/Capt.	H. McIntyre.
Capt.	G. W. C. Hickie.
Temp. 2nd Lieut.	C. W. Bush.
Temp. Capt.	J. N. Reeves.
A/Capt.	A. E. B. Nugent.
Temp. Capt.	J. South.
Capt.	A. A. King (T.F.).
A/Capt.	C. D. Wells.
A/Capt.	L. Marriage (T.F.).
Major	J. K. Mackintosh, D.S.O. (T.F.).
Temp. Capt.	A. D. Dodgson.
Temp. Capt.	E. Cawston.
Temp. Capt.	J. J. Rogers.
Temp. Capt.	H. W. Segrave.

HOSPITAL

Horse Transport

Temp. Lieut.	R. G. Craig.
Temp. 2nd Lieut.	G. C. P. Jones.
A/Capt.	W. S. J. Boyd.
Temp. 2nd Lieut.	F. F. Brown.
Temp. Lieut.	R. D. Shaw.
Temp. Capt.	A. M. Robertson, M.C.
Temp. Lieut.	P. L. Jones.
Temp. Lieut.	F. A. G. P. Gore.
Temp. 2nd Lieut.	E. Hartigan.
Temp. 2nd Lieut.	T. A. Keogan.
A/Capt.	W. W. Sherlock.
Temp. Lieut.	R. P. E. Richards.
A/Capt.	F. L. Wilkins.

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Temp. Lieut. . .	M. H. G. Lawless.
Temp. Captain . .	R. J. Ilsley.
Temp. 2nd Lieut. . .	A. G. Langford.
Temp. 2nd Lieut. . .	J. L. Robertson.
A/Capt. . . .	N. P. Frampton.
Temp. Lieut. . .	R. A. Featherstone-Smith.
Temp. 2nd Lieut. . .	A. J. McLean.
A/Capt. . . .	C. M. Butler (T.F.).

ADVANCED HORSE TRANSPORT DEPOT: LUDD

(No. 973 H.T. Company, R.A.S.C.)

Major . . .	A/Major	W. Vincent (T.F.), M.C.
Capt. . . .	Temp. 2nd Lieut.	C. B. Kershaw.
Sub. . . .	Temp. 2nd Lieut.	J. W. Brompton.
Sub. . . .	Temp. 2nd Lieut.	A. French (attached E.A., H.T. Depot).
Sub. . . .	Temp. Lieut.	W. C. McIntyre (Hosp.).
Sub. . . .	Temp. 2nd Lieut.	A. A. G. Smith.
Sub. . . .	Temp. Lieut.	F. L. Holt (Interpreter).
Sub. . . .	Temp. 2nd Lieut.	J. E. Richardson.
Quartermaster and	Lieut.	A. Griffiss, S.T.O., Ramleh-Ludd.

Officers Attached

Horse Transport

Temp. 2nd Lieut. . .	S. C. G. Fielder.
Lieut.	K. G. Priestley (T.F.).
Lieut.	N. F. Dyke (T.F.).
Temp. 2nd Lieut. . .	W. E. Salt.
Temp. 2nd Lieut. . .	F. J. Pullen.
A/Capt. . . .	E. McK. Taylor.
Temp. Lieut. . .	G. W. F. Ward.
Temp. Capt. . .	F. R. Buckley.

INDIAN TRANSPORT DEPOT: KANTARA

O.C., Major . .	Major	A. J. Rennison, D.S.O., S.T.C.
Adjt. Capt. . .	A/Capt.	I. Clements, S.T.C.
Capt. . . .	A/Capt.	A. B. C. Mildmay, I.A.R.O. (D2) (temp. duty Indian Cavalry Base Depot).

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313 (6TH AUXILIARY) H.T. COMPANY, R.A.S.C. : CAIRO

Capt. . . .	Temp. Capt.	H. B. Browne.
Sub. . . .	Temp. Lieut.	C. Myers.
Sub. . . .	Temp. 2nd Lieut.	R. A. W. Bradshaw.
Sub. . . .	Temp. 2nd Lieut.	H. M. Theobald.
Sub. . . .	Temp. 2nd Lieut.	R. E. Matthews.

671 (9TH AUXILIARY) H.T. COMPANY, R.A.S.C. : ALEXANDRIA

Capt. . . .	Temp. Capt.	T. W. Grace.
Sub. . . .	Temp. 2nd Lieut.	C. R. Morriss.
Sub. . . .	Lieut.	D. C. MacBain (T.F.).
Sub. . . .	Temp. Lieut.	B. H. H. Clarke.
Sub. . . .	Temp. 2nd Lieut.	R. F. Robinson.

900 (23RD AUXILIARY) H.T. COMPANY, R.A.S.C. : RAMLEH

Capt. . . .	Temp. Capt.	W. H. Dickinson.
Sub. . . .	Temp. 2nd Lieut.	R. H. L. Lushington.
Sub. . . .	Temp. 2nd Lieut.	J. L. Ray.
Sub. . . .	Temp. 2nd Lieut.	G. A. Corps.
Sub. . . .	Temp. 2nd Lieut.	T. S. Roberts (temp. duty with 20th Inf. Bde. Train).

930 (24TH AUXILIARY) H.T. COMPANY, R.A.S.C. : ALEXANDRIA

Capt. . . .	Temp. Capt.	F. E. Wiles.
Sub. . . .	Temp. Lieut.	H. Herklots.
Sub. . . .	Temp. 2nd Lieut.	H. I. Thomas.
Sub. . . .	Temp. 2nd Lieut.	J. Walker.
Sub. . . .	Temp. 2nd Lieut.	J. W. Care.
	Temp. Lieut.	R. T. Leeman.

EGYPTIAN ARMY HORSE TRANSPORT CORPS

Kaimakam	C. Ward Ritson (Bey)	Tel el Kebir.
Bimbashi	G. C. Mostyn-Owen	Tel el Kebir.
Bimbashi	Hamed Effendi Rifaat	Tel el Kebir.
Sagh	Mahmud Effendi Bahgat, M.C.	Tel el Kebir.
Yousbashi	Mohd. Effendi Saber	P.L. of C.
Yousbashi	Mohd. Effendi Shefik Emin	Cairo.
Yousbashi	Hussien Effendi Shukri	Alexandria.
Yousbashi	Mohd. Effendi Khelil	Ludd and Ramleh.
Yousbashi	Taufik Effendi Hilmi	Tel el Kebir.
Yousbashi	Abdulla Effendi Fahmi	Tel el Kebir.
Yousbashi	Mursi Effendi Saleh	Tel el Kebir.

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Yousbashi	Abdul Hamid Effendi Mohammed	Tel el Kebir.
Yousbashi	Negib Effendi Meleika	Tel el Kebir.
Yousbashi	Mahmud Effendi Askar	Tel el Kebir
Yousbashi	Mohammed Effendi Yusri, M.C.	Tel el Kebir.
Mul. Awal	Mustapha Effendi Hamed	Alexandria.
Mul. Awal	Abdul Haid Effendi Abul Einein	Tel el Kebir.
Mul. Awal	Khailia Effendi Abdel Milek	Tel el Kebir.
Mul. Awal	Hassan Effendi Abdel Samad	Tel el Kebir.
Mul. Awal	Taha Effendi Mohammed	Tel el Kebir.
Mul. Awal	Abdul Hamed Effendi Shibl Musa	Tel el Kebir.
Mul. Awal	Taha Effendi Gad	Tel el Kebir.
Mul. Awal	Mohammed Effendi Bayami	Tel el Kebir.
Mul. Awal	Sid Hamed Effendi Sheham el Din	Tel el Kebir.
Mul. Tani	Mohd. Effendi Moafie	Tel el Kebir.
Mul. Tani	Mohd. Effendi Dervish	Tel el Kebir.
Mul. Tani	Abd Effendi Hassen Rashed	Cairo.
Mul. Tani	Mohd. Effendi Mohd. el Ashar	Ludd and Ramleh.
Mul. Tani	Mohd. Effendi Farahet	Alexandria.
Mul. Tani	Abbas Effendi Hilmiwasfi	Tel el Kebir
Mul. Tani	Khalif Effendi Ali Hassen	Tel el Kebir.
Mul. Tani	Ibrahim Effendi Subhi	Tel el Kebir.
Mul. Tani	Hafez Effendi Ismail	Tel el Kebir.

MAIN SUPPLY DEPOT: ALEXANDRIA

Major . . .	A/Major	L. G. Moir.
Capt. . . .	Capt.	G. R. Potter (T.F.).
Capt. . . .		
Sub. . . .	Temp. 2nd Lieut.	W. Oldershaw.
	Temp. Lieut.	P. Grieve.
	Temp. Lieut.	M. Hobson.
	Temp. 2nd Lieut.	L. Wooderson.
	Temp. 2nd Lieut.	E. J. Cave.
	Temp. Lieut.	L. Hawes.
Quartermaster .	Quartermaster and Capt.	A. T. White.

MAIN SUPPLY DEPOT: CAIRO

Major . . .	A/Major	J. W. D. Cook (T.F.).
Capt. . . .	Temp. Capt.	W. E. Lonnon (Central Sack Depot).
Capt. . . .	Capt.	E. L. T. Grant (R. of O., Maadi).
Capt. . . .	Temp. Capt.	N. A. R. Songest (D.I.D.).

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Capt. . . .	Temp. Capt.	G. V. Miskin.
Sub. . . .	Temp. 2nd Lieut.	G. M. Bromley (D.I.D.).
Sub. . . .		
Sub. . . .		
Quartermaster .	Quartermaster and Capt.	G. J. Chalmers.
Quartermaster .	Quartermaster and Capt.	S. R. H. Luscombe.
Quartermaster .		

MAIN SUPPLY DEPOT: PORT SAID

(Includes O.C., R.A.S.C.)

Major . . .	A/Major	H. M. Blenkharne (and O.C., R.A.S.C.).
Capt. . . .	Temp. Capt.	A. F. N. Maurice.
Capt. . . .	Temp. Capt.	O. H. Carter.
Capt. . . .	Temp. Capt.	W. J. A. Tillerary (S.L.O.)
Capt. . . .	A/Capt.	W. J. Purcell.
Sub. . . .	Temp. Lieut.	G. V. M. Stevens.
Sub. . . .	Temp. 2nd Lieut.	F. H. C. U. Burke.
Sub. . . .	Temp. Lieut.	C. Kirkland.
Sub. . . .	Temp. 2nd Lieut.	L. W. Norris.
Sub. . . .	Temp. 2nd Lieut.	A. M. Dell.
Sub. . . .	Temp. 2nd Lieut.	V. G. Milton.
Sub. . . .		
Sub. . . .		
Quartermaster .		

MAIN SUPPLY DEPOT: KANTARA

Major . . .	Temp. Capt.	F. G. Johns.
Capt. . . .	Temp. Capt.	R. B. Mitford.
Capt. . . .	A/Capt.	W. J. Pulford.
Sub. . . .	Temp. 2nd Lieut.	D. Jackson.
Sub. . . .	Temp. 2nd Lieut.	R. F. Banks.
Sub. . . .	Temp. 2nd Lieut.	L. Tucker.
Sub. . . .	Temp. Lieut.	J. M. Murray.
	Temp. Lieut.	M. A. Popham.
	Temp. 2nd Lieut.	P. C. J. Baker.
	Temp. 2nd Lieut.	H. G. Grantham.
Quartermaster .	Quartermaster and Capt.	A. E. Walsh.

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FROZEN MEAT SUPPLIES: PORT SAID

Capt. . . .	Quartermaster and Capt.	W. Taylor, M.C.
Sub. . . .	Temp. Lieut.	H. L. Barry.
Sub. . . .	Temp. Lieut.	B. Roper.
Sub. . . .	Temp. Lieut.	D. C. Kinghorn.
Sub. . . .	Temp. 2nd Lieut.	M. Wilkinson.

MAIN SUPPLY DEPOT: SUEZ

Major . . .	Temp. Major	L. M. Clark (O.C., R.A.S.C., Port Tewfik).
Capt. . . .	Temp. Capt.	A. M. Carr-Saunders.
Capt. . . .		
Sub. . . .	Temp. Lieut.	A. W. La Vierge.
Sub. . . .	Temp. Lieut.	F. Holden.
Sub. . . .	Temp. Lieut.	G. Rose.
Sub. . . .	Lieut.	E. Redwood (T.F.).
Sub. . . .		

SUPPLY DEPOTS

Establishment.—Majors, 2; Captains, 17; Subalterns, 30; Quartermasters, 3; Total, 52.

Alexandretta

Temp. Capt. . . W. V. Sloan.

Amman

Temp. Capt. . . R. G. Goslett.

Allied Contingent

A/Capt. . . . H. M. Fox (T.F.).

Assiout

Temp. 2nd Lieut. . . J. T. Astley.

Afueleh

Lieut. . . . . G. F. Musgrove (T.F.).

Belbeis

Temp. 2nd Lieut. . . E. Upton.

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BEIROUT

Capt.	R. G. Cockrill (T.F.).
Temp. Lieut. . .	C. A. T. Foreman.
Temp. Lieut. . .	L. W. Hughes.
Temp. Lieut. . .	H. V. Taylor.
Temp. 2nd Lieut. . .	S. J. Peters.
Temp. 2nd Lieut. . .	A. H. Gain.
Quartermaster and Capt.	F. Morgan.

DAMASCUS

A/Capt. . . .	H. McF. Metcalfe.
Temp. 2nd Lieut. . .	H. A. Pye (Hosp.).
Temp. 2nd Lieut. . .	D. P. James.

DAIRY FARM, WILHELMA

Temp. 2nd Lieut. . .	J. H. Trewin.

EL ARISH

Temp. 2nd Lieut. . .	A. F. R. Fowkes.

FAT FACTORY, KANTARA

Lieut.	W. S. Brashaw (T.F.).

GAZA

Temp. 2nd Lieut. . .	J. P. Foster.

HAIFA

Capt.	E. W. Harper (T.F.).
Temp. Lieut. . .	E. W. B. Cunnington.
Temp. 2nd Lieut. . .	A. U. Peterson.

JERICHO

Temp. Lieut. . .	R. A. Taylor.

JERUSALEM

Quartermaster and Capt.	W. H. Smart, M.C.
Temp. 2nd Lieut. . .	J. J. P. Wilson.

KHARTOUM

Capt.	H. M. Cadic, O.C., R.A.S.C.

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LUDD

Temp. Lieut.	T. W. Cleland.
Temp. 2nd Lieut.	R. P. V. Tabb.
Temp. 2nd Lieut.	A. J. Schooling.

MATRUH

Temp. 2nd Lieut.	E. W. Marsh.

MERSIMA

Temp. 2nd Lieut.	G. Preen.

MOASCAR

A/Capt.	F. J. Farren (T.F.).

RAFA

Quartermaster and Capt.	H. Rawle.
Temp. Lieut.	P. B. Dell.

SOLLUM

Temp. Capt.	G. H. Safford.

RAYAK

A/Major	W. N. Foster, D.S.O.
Temp. Lieut.	S. A. Thorp.

SEMAKH

Temp. Capt.	J. W. Gentleman.
Temp. 2nd Lieut.	T. E. Reynolds.

TRIPOLI

Temp. Lieut.	H. E. Oliver.
Temp. Lieut.	C. B. Stebbings.

TUL KERAM

Temp. Lieut.	H. J. Wesley.
Temp. 2nd Lieut.	L. H. Sheaves.

TEL EL KEBIR

Temp. Capt.	A. R. Tanner.
Temp. Lieut.	E. C. Shuter.

ZAGAZIG

Temp. Capt.	F. M. Pearson.

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G.H.Q. SUPPLY DEPOT: BIR SALEM

Sub. . . . Temp. 2nd Lieut. H. P. Newman.

COMPRESSED FORAGE FACTORIES

Establishment.—Captains, 1; Subalterns, 5.

ASSIOUT

Temp. Lieut. . . B. V. R. Greatrex.
Temp. 2nd Lieut. . . E. B. Larid.

BARRAGE

Lieut. . . . . R. K. Smith (T.F.).

GABBARI

Temp. Capt. . . P. W. Flee wood.
Temp. 2nd Lieut. . . E. A. Dickson.

MANSURA

Temp. Lieut. . . W. H. Hope.

ZAGAZIG

Temp. 2nd Lieut. . . E. H. Davy.

LINES OF COMMUNICATION SUPPLY COMPANIES

No. 18. SUEZ

Capt. . . . Temp. Capt. H. L. Slocock.
Sub. . . . Temp. 2nd Lieut. E. J. Mason.
Sub. . . . Temp. 2nd Lieut. T. Coulter.
Sub. . . . Temp. 2nd Lieut. J. E. D. Hall.

No. 19. KANTARA

Capt. . . . A/Capt. C. G. Ripley.
A/Capt. P. H. Lambert ("Pivotal").
Sub. . . . Temp. Lieut. A. Christey (temp. duty at Port Said).
Sub. . . . Temp. 2nd Lieut. D. W. Musselwhite.
Sub. . . .

No. 20. PORT SAID

Capt. . . . Temp. Capt. W. J. Shaw (Hosp.).
Sub. . . . Temp. 2nd Lieut. J. A. Tulloch.
Sub. . . . Temp. 2nd Lieut. W. E. Gold.
Sub. . . .

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No. 21. PALESTINE

Capt. . . .	Temp. Lieut.	A. M. Hutton.
Sub. . . .		
Sub. . . .		
Sub. . . .		

No. 22. PALESTINE

Capt. . . .	Temp. Capt.	G. K. Congreve (Ludd).
Sub. . . .	Temp. 2nd Lieut.	L. E. Lawrence (Tripoli).
Sub. . . .	Temp. 2nd Lieut.	A. S. Eames (Dairy Farm).
Sub. . . .		

No. 23. CAIRO

Capt. . . .	A/Capt.	G. F. de C. Herridge (T.F.).
Sub. . . .	T. Lieut.	H. S. White.
Sub. . . .	Temp. 2nd Lieut.	W. T. Meek.
Sub. . . .	Temp. 2nd Lieut.	G. W. Hamilton.

No. 24. ALEXANDRIA

Capt. . . .	A/Capt.	G. W. Shuter, T.F. (D.I.D.).
Sub. . . .	Temp. Lieut.	R. S. J. Holmes.
Sub. . . .	Temp. 2nd Lieut.	H. C. H. Tarr (Hosp.).
Sub. . . .	Temp. 2nd Lieut.	E. G. Davies (Asst. D.I.D.).

No. 25. ALEXANDRIA

Capt. . . .	Temp. Capt.	H. M. Keen.
Sub. . . .	Temp. 2nd Lieut.	T. L. Grumbridge.
Sub. . . .	Temp. 2nd Lieut.	C. Way.
Sub. . . .	Temp. Lieut.	P. G. MacDonald.

No. 34. JAFFA

Capt. . . .	Temp. Capt.	A. F. Robson (R.A. to D.A.D.S.T., Ramleh).
Sub. . . .	Temp. 2nd Lieut.	L. W. Rose (Sarona).
Sub. . . .	Temp. 2nd Lieut.	W. McCondach (Sarona).
Sub. . . .		

No. 35. JERUSALEM

Capt . . .	Capt.	W. E. McGregor, M.C. (T.F.) (Beirut).
	A/Capt.	G. W. Gotto (" Pivotal ").
Sub. . . .	Temp. 2nd Lieut.	A. D. Laing (Ras-el-Ain).
Sub. . . .	Temp. 2nd Lieut.	W. Shelley (Haifa).
Sub. . . .		

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No. 36. KANTARA

Capt. . . .	Temp. Capt.	B. D. H. Fleming.
Sub. . . .	Temp. 2nd Lieut.	P. P. Crowe.
Sub. . . .	Temp. 2nd Lieut.	W. A. Miller.
Sub. . . .		

No. 37. KANTARA

Capt. . . .	Temp. Capt.	G. F. McCarthy (Hosp.).
Sub. . . .	Temp. 2nd Lieut.	W. H. Driver (Suez).
Sub. . . .		
Sub. . . .		

D COMPANY SUPPLY. DELTA DISTRICT

Capt. . . .	Temp. Capt.	G. G. Johnston (O. i/c Supplies, Mustapha).

FIELD BAKERIES

No. 18. EGYPT

Capt. . . .	Quartermaster and Capt.	F. J. Bayman, M.C.
Sub. . . .	Temp. 2nd Lieut.	F. L. Crawley.

No. 19. PALESTINE

Capt. . . .	Quartermaster and Capt.	W. Baker.
Sub. . . .		

No. 26. CAIRO

Capt. . . .	Quartermaster and Capt.	S. C. Warner, M.C.
	Quartermaster and Capt.	G. F. Green.
Sub. . . .	Temp. 2nd Lieut.	P. W. Jones.

No. 27. JERUSALEM

Capt. . . .	Quartermaster and Capt.	G. H. Moorman.
Sub. . . .		

ADVANCED MECHANICAL TRANSPORT SUB-DEPOTS: EGYPT

(1) CAIRO

Capt. . . .	A/Capt.	H. H. Creese.
Sub. . . .	Temp. Lieut.	F. W. B. Hosken.

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(2) KANTARA

Capt. . . .	A/Capt.	R. J. D. Collins.
Sub. . . .	Temp. 2nd Lieut.	J. W. Stewart.

(3) LUDD

Major . . .	A/Major	E. A. Nesbitt, I.A.R.O.
Capt. . . .	A/Capt.	G. W. Bromley.
Sub. . . .	Temp. 2nd Lieut.	J. W. Joyce.
Sub. . . .	Temp. Lieut.	W. G. Phillips (i/c Cycles).
Sub. . . .	Temp. 2nd Lieut.	C. Dawson.
Quartermaster .	Quartermaster and Capt.	E. Paul.

ATTACHED

Temp. 2nd Lieut.	A. G. Pearce.
Temp. 2nd Lieut.	I. J. Griffiths.
Temp. 2nd Lieut.	H. E. Greenberg.

M.T. STORES BRANCH, ADVANCED M.T. SUB-DEPOT: LUDD

Capt. . . .	A/Capt.	D. Kennedy (leave U.K.).

803 M.T. COMPANY, R.A.S.C. (DIVISIONAL AMMUNITION PARK): ALEXANDRIA

Major . . .	A/Major	H. A. Fox (and D.I.M.T., Alexandria).
Capt. (Works) .	Temp. Capt.	R. J. Williams.
	A/Capt.	A. S. Duggan.
Sub. . . .	Temp. 2nd Lieut.	C. D. Jepson (Hosp.).
Sub. . . .	Temp. 2nd Lieut.	E. H. Kirk.
Sub. . . .	Temp. 2nd Lieut.	F. E. Barwood.
Sub. . . .	Temp. 2nd Lieut.	E. W. Pratt.

847 M.T. COMPANY, R.A.S.C. (DIVISIONAL AMMUNITION PARK): PALESTINE

Major . . .	A/Major	C. White, M.C.
Capt. (Works) .	A/Capt.	W. B. Miller.
Sub. . . .	Temp. Lieut.	T. H. Field.
Sub. . . .	Temp. 2nd Lieut.	E. T. Kendall.
Sub. . . .	Temp. 2nd Lieut.	H. Armstrong.
Sub. . . .	Temp. 2nd Lieut.	G. L. Brewster.
	Temp. Lieut.	H. L. Yonge.

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493 M.T. COMPANY, R.A.S.C. (DIVISIONAL AMMUNITION PARK): KANTARA

Major . . .	Major (T.)	A. H. R. M. Laird, M.C. (D. I. M. T., P.L. of C.).
Capt. (Works) .	A/Capt.	J. H. T. Willis.
Sub. . . .	Temp. 2nd Lieut.	W. M. Howard.
Sub. . . .	Temp. 2nd Lieut.	P. H. C. Hervey.
Sub. . . .	Temp. 2nd Lieut.	C. E. Lowe.
Sub. . . .	Temp. 2nd Lieut.	H. W. Rouche.

M.T. LORRY DETACHMENT AT KANTARA

Temp. 2nd Lieut. W. Freeman.

3RD BASE MECHANICAL TRANSPORT DEPOT (NO. 500 M.T. COMPANY, R.A.S.C.): ALEXANDRIA

Capt. . . .	A/Capt.	C. H. D. French.
Sub. . . .	Temp. Lieut.	B. A. Robinson, B1, L. of C.

ATTACHED

Temp. Lieut.	L. E. Collier, Class "D."
Temp. 2nd Lieut.	O. Hargreaves, Class "D."

LEAVE OUT OF EGYPT

Temp. 2nd Lieut. . .	H. Price.
Temp. 2nd Lieut. . .	H. A. Dartnall.
Temp. Lieut. . .	D. S. Fergusson.

IN HOSPITAL

Temp. Capt.. . .	H. C. Doyne.
A/Capt. . . .	A. C. Riley.
Temp. 2nd Lieut. . .	A. P. Davies.
Temp. 2nd Lieut. . .	C. Crawley.
Temp. 2nd Lieut. . .	A. Willcox.
Temp. 2nd Lieut. . .	C. G. Thomas.
Temp. Lieut. . .	D. E. Cope.
A/Capt. . . .	F. N. Parker.
Temp. Lieut. . .	R. H. Nicholls.
Temp. 2nd Lieut. . .	F. Barber.
Temp. Lieut. . .	M. McGraith.
Temp. 2nd Lieut. . .	J. McL. Connell.
Temp. 2nd Lieut. . .	D. F. Hardie.

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NO. 644 M.T. COMPANY, R.A.S.C. (HEAVY REPAIR WORKSHOP, M.T.): ALEXANDRIA

Lieut.-Colonel or Major	Temp. Major	B. N. Foster.
Major (Works)	A/Major	W. M. Vacy Ash.
Capt.	A/Capt.	W. P. A. Chapman.
Capt.	A/Capt.	H. M. Salmon.
Capt.	A/Capt.	J. J. Clark.
Capt.	A/Capt.	I. Cooper (O. i/c E Section, Ludd).
Sub.	Temp. 2nd Lieut.	T. Furness.
Sub.	Temp. Lieut.	H. N. Nugent.
Sub.	Temp. Lieut.	R. J. McEldowney.
Sub.	Temp. Lieut.	G. G. Wrigley.

BASE M.T. STORES

Major	A/Major	G. Jaggard.
Capt.	A/Capt.	A. S. Gordon.
Capt.	Temp. Lieut.	A. P. Burman.
Adjutant	Capt.	R. Rippon (D. of W. Regt., T.F.).
Sub.	Temp. 2nd Lieut.	G. G. Proctor.
Sub.	Temp. 2nd Lieut.	J. D. Pringle.
Sub.	Temp. Lieut.	A. E. Golding.
Sub.	Temp. 2nd Lieut.	F. Eddington (Kantara).

790 M.T. COMPANY, R.A.S.C.: CAIRO

Major	A/Major	A. O. Samson, T.F. (and D.I.M.T.).
Sub.	Temp. Lieut.	P. A. E. Bernard.

SUPPLY COLUMN

Capt.	A/Capt.	E. W. Pearson (O.C., M.T., Coastal Section).
Sub.	Temp. 2nd Lieut.	J. A. Webb.
Sub.	Temp. Lieut.	Sir C. G. Lampson, Bart.
Sub.	Temp. 2nd Lieut.	L. Caswell.
Sub.	Temp. 2nd Lieut.	R. Ponder.

811 M.T. COMPANY, R.A.S.C.: KANTARA
(Attached 101st Siege Battery, R.G.A.)

Capt.	A/Capt.	H. G. Kemmis (T.F.).
Sub. (Works)	Temp. Lieut.	N. W. C. Cartmell.
Sub.	Temp. 2nd Lieut.	D. W. Morgan (Hosp.).

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894 M.T. COMPANY, R.A.S.C.: ZAHLE
(35th Motor Ambulance Convoy)

Capt. . .	Temp. Capt.	W. S. Engall.
Capt. (Works)	A/Capt.	H. A. Rhodes.
Sub. . .	Temp. 2nd Lieut.	W. H. Clift.
Sub. . .	Temp. 2nd Lieut.	J. W. Graham.
	Temp. 2nd Lieut.	R. McLerie (Hosp.).

895 M.T. COMPANY, R.A.S.C.: RAMLEH
(1st M.T. Tractor Company)

Capt. . .	A/Capt.	C. R. Leake.
Sub. (Works)	Temp. Lieut.	R. H. P. C. Bainbrigge.
Sub. . .	Temp. 2nd Lieut.	R. F. Raven.
Sub. . .	Temp. 2nd Lieut.	H. W. Lindley.
Sub. . .	Temp. 2nd Lieut.	B. Browne.
Sub. . .	Temp. 2nd Lieut.	E. Christmas.

904 M.T. COMPANY, R.A.S.C.: TUL KERAM
(Attached 10th and 195th Heavy Batteries, R.G.A.)

Capt. . .	A/Capt.	A. F. M. Wright.
Sub. (Works)	Temp. 2nd Lieut.	S. Browne
Sub. . .	Temp. Lieut.	N. S. Taylor.

905 M.T. COMPANY, R.A.S.C.: TRIPOLI
(54th Auxiliary Petrol Company)

Capt. . .	Temp. Capt.	A. H. Borton.
Sub. (Works)	Temp. 2nd Lieut.	H. E. Wright.
Sub. . .	Temp. 2nd Lieut.	S. E. Bullock.
Sub. . .	Temp. Lieut.	F. Lambert.
Sub. . .	Lieut.	J. F. Reid (T.F.).
Sub. . .	Temp. 2nd Lieut.	E. R. Neve.
Sub. . .	Temp. Lieut.	W. H. Lindley.
	Temp. 2nd Lieut.	A. R. D. Styles.

906 M.T. COMPANY, R.A.S.C.: BEIRUT
(52nd Auxiliary Petrol Company)

Capt. . .	Capt.	J. W. Owen.
Sub. (Works)	Temp. 2nd Lieut.	J. Minto.
Sub. . .	Temp. 2nd Lieut.	H. C. J. R. Smith.
Sub. . .	Temp. 2nd Lieut.	C. W. King.
Sub. . .	Temp. 2nd Lieut.	R. Smerdon.
Sub. . .	Lieut.	C. A. Branston (T.F.).
Sub. . .	Temp. 2nd Lieut.	E. R. Miller.

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907 M.T. COMPANY, R.A.S.C.: RAMLEH

(53rd Auxiliary Petrol Company)

Capt. . . .	A/Capt.	D'A. Horn.
Sub. (Works) .	Temp. 2nd Lieut.	G. Shepherd.
Sub. . . .	Temp. 2nd Lieut.	I. D. J. Williams.
Sub. . . .	Temp. Lieut.	S. G. Rendell.
Sub. . . .	Temp. 2nd Lieut.	A. Anson (temp. detached with 347 Company).
Sub. . . .	Temp. 2nd Lieut.	L. E. H. Roberts.
	Temp. 2nd Lieut.	H. Stevens.

951 M.T. COMPANY, R.A.S.C.: KANTARA

(Attached 189th Heavy Battery, R.G.A.)

Capt. . . .	A/Capt.	B. H. Cope.
Sub. (Works) .	Temp. 2nd Lieut.	C. H. Mahon.
Sub. . . .		

952 M.T. COMPANY, R.A.S.C.: KANTARA

(Attached 202nd Heavy Battery, R.G.A.)

Capt. . . .	A/Capt.	W. H. Rowlett (T.F.).
Sub. (Works) .	Temp. 2nd Lieut.	J. Huntington.
Sub. . . .	Temp. 2nd Lieut.	H. E. Pickering.

955 M.T. COMPANY, R.A.S.C.: KANTARA

(Attached 300th Siege Battery, R.G.A.)

Capt. . . .	A/Capt.	J. H. C. Johnson.
Sub. (Works) .	Temp. 2nd Lieut.	W. C. Hughes.
Sub. . . .		

956 M.T. COMPANY, R.A.S.C.: SURAFEND

(82nd Auxiliary Petrol Company, Egypt)

Capt. . . .	A/Capt.	D. M. Scott.
Sub. (Works) .	Temp. Lieut.	W. Fox.
Sub. . . .	Temp. Lieut.	T. A. Ryde.
Sub. . . .	Temp. 2nd Lieut.	G. G. Ace (temp. duty with 347 M.T. Company).
Sub. . . .	Temp. 2nd Lieut.	G. Whitehouse.
Sub. . . .	Temp. 2nd Lieut.	A. C. Jackson.
Sub. . . .	Temp. 2nd Lieut.	R. K. Frost.

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963 M.T. COMPANY, R.A.S.C.: TUL KERAM
(Attached 378th Siege Battery, R.G.A.)

Capt. . . .	A/Capt.	H. J. Gale.
Sub. (Works) .	Temp. Lieut.	N. McL. Pressley.
Sub. . . .	Temp. 2nd Lieut.	W. M. Stubbs.

964 M.T. COMPANY, R.A.S.C.: TUL KERAM
(Attached 379th Siege Battery)

Capt. . . .	A/Capt.	P. D. Leckie.
Sub. (Works) .	Temp. Lieut.	P. Adair.
Sub. . . .		

965 M.T. COMPANY, R.A.S.C.: KANTARA
(Attached 380th Siege Battery, R.G.A.)

Capt. . . .	A/Capt.	W. L. Tavener (T.F.).
Sub. (Works) .	Temp. 2nd Lieut.	H. L. West.
Sub. . . .	Temp. 2nd Lieut.	J. A. M. Howe.

966 M.T. COMPANY, R.A.S.C.: JERUSALEM
(Attached 383rd Battery, R.G.A.)

Capt. . . .	A/Capt.	G. W. Morrice (T.F.).
Sub. (Works) .	Temp. 2nd Lieut.	C. H. R. Norrington.
Sub. . . .	Temp. 2nd Lieut.	W. B. M. Mellish.

967 M.T. COMPANY, R.A.S.C.: TUL KERAM
(Attached 387th Siege Battery, R.G.A.)

Capt. . . .	A/Capt.	F. H. W. Bullock.
Sub. (Works) .	Temp. 2nd Lieut.	W. March
Sub. . . .		

972 M.T. COMPANY, R.A.S.C.: RAMLEH
(2nd M.T. Tractor Company)

Capt. . . .	A/Capt.	G. Aitchison.
Sub. (Works) .	Temp. 2nd Lieut.	J. F. Corfield.
Sub. . . .	Temp. Lieut.	G. Talbot.
Sub. . . .	Temp. 2nd Lieut.	D. H. Thomas.
Sub. . . .	Temp. Lieut.	R. N. Harrison.
Sub. . . .	Temp. 2nd Lieut.	G. Hammonds.

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980 M.T. COMPANY, R.A.S.C.: JERUSALEM
(Attached 423rd Siege Battery, R.G.A.)

Capt. . . .	Temp. Capt.	C. Maldrum.
Sub. (Works) .	Temp. 2nd Lieut.	R. O. Canning.
Sub . . .		

982 M.T. COMPANY, R.A.S.C.: KANTARA
(Attached 420th Siege Battery, R.G.A.)

Capt. . . .	Temp. Capt.	G. Y. Durward.
Sub. (Works) .	Temp. 2nd Lieut.	J. E. Mermod.
Sub. . . .	Temp. 2nd Lieut.	R. D. Cleveland (Hosp.).

983 M.T. COMPANY, R.A.S.C.: TUL KERAM
(Attached 421st Siege Battery, R.G.A.)

Capt. . . .	A/Capt.	G. R. Morriss.
Sub. (Works) .	Temp. 2nd Lieut.	S. H. Delves.
Sub. . . .	Temp. 2nd Lieut.	R. S. Freeman.

984 M.T. COMPANY, R.A.S.C.: KANTARA
(Attached 422nd Siege Battery, R.G.A.)

Capt. . . .	Capt.	E. F. Lumsden, S.R.
Sub. (Works) .	Temp. 2nd Lieut.	S. C. Randall.
Sub. . . .	Temp. 2nd Lieut.	F. H. Millard.

988 M.T. COMPANY, R.A.S.C.: ISMAILIA
(Attached 184th Siege Battery, R.G.A.)

Capt. . . .	A/Capt.	R. T. Bayford.
Sub. (Works) .	Temp. 2nd Lieut.	W. H. Moon.
Sub. . . .	Temp. 2nd Lieut.	L. E. Oliver.

989 M.T. COMPANY, R.A.S.C.: KANTARA
(Attached 205th Siege Battery, R.G.A.)

Capt. . . .	A/Capt.	A. K. Knight.
Sub. (Works) .	Temp. 2nd Lieut.	F. N. Walker.
Sub. . . .	Temp. Lieut.	C. E. Perry.

990 M.T. COMPANY R.A.S.C.: JERUSALEM
(Attached 43rd Siege Battery, R.G.A.)

Capt. . . .	A/Capt.	A. R. F. Murdock.
Sub. (Works) .	Temp. 2nd Lieut.	A. J. Catford.
Sub. . . .		

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1006 M.T. COMPANY, R.A.S.C.: JERUSALEM
(Attached 440th Siege Battery, R.G.A.)

Capt. . . .	A/Capt.	H. McIvor.
Sub. (Works). .	Temp. 2nd Lieut.	G. C. J. Kennett.
	Temp. 2nd Lieut.	J. Robertson.

1007 M.T. COMPANY, R.A.S.C.: KANTARA
(Attached 445th Siege Battery, R.G.A.)

Capt. . . .	A/Capt.	D. E. Krauss.
Sub. (Works) .	Temp. 2nd Lieut.	H. Parker.
Sub. . . .	Temp. 2nd Lieut.	R. Barber.

1008 M.T. COMPANY, R.A.S.C.: JERUSALEM
(Attached 443rd Siege Battery, R.G.A.)

Capt. . . .	A/Capt.	N. G. Grieve.
Sub. (Works) .	Temp. 2nd Lieut.	W. Fielding.
Sub. . . .		

1009 M.T. COMPANY, R.A.S.C.: TRIPOLI
(79th Auxiliary Petrol Company)

Capt. . . .	Temp. Capt.	A. Handley.
Sub. (Works) .	Temp. 2nd Lieut.	F. H. Brown.
Sub. . . .	Temp. 2nd Lieut.	H. E. Komlosy.
Sub. . . .	Temp. 2nd Lieut.	E. J. Chase.
Sub. . . .	Temp. 2nd Lieut.	C. H. Day.
Sub. . . .	Temp. 2nd Lieut.	W. Shaw.

1010 M.T. COMPANY, R.A.S.C.: ALEXANDRIA
(80th Auxiliary Petrol Company)

Capt. . . .	Temp. Capt.	J. L. Bradley.
Sub. (Works) .	Temp. 2nd Lieut.	C. J. Langstone.
Sub. . . .	Temp. 2nd Lieut.	F. Dudgeon.
Sub. . . .	Temp. 2nd Lieut.	H. J. Walters.
Sub. . . .	Temp. 2nd Lieut.	G. G. Richards.
Sub. . . .	Temp. 2nd Lieut.	J. M. Smith.
	Temp. Lieut.	A. M. Clement.

1011 M.T. COMPANY, R.A.S.C.: TRIPOLI
(81st Auxiliary Petrol Company)

Capt. . . .	A/Capt.	R. S. Brander (T.F.).
Sub. (Works) .	Temp. 2nd Lieut.	G. Clafton.
Sub. . . .	Temp. 2nd Lieut.	J. Steel.

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Sub. . . .	Temp. 2nd Lieut.	S. Miller.
Sub. . . .	Temp. 2nd Lieut.	P. W. Hobbs.
Sub. . . .	Temp. 2nd Lieut.	A. McC. Stevenson.
	Temp. 2nd Lieut.	A. E. Williams.

1030 M.T. COMPANY, R.A.S.C.: ALEXANDRIA

Capt. . . .	Temp. Capt.	A. Williams.
Sub. (Works) .	Temp. 2nd Lieut.	L. H. Chapman.
Sub. . . .	Temp. 2nd Lieut.	N. C. Pollock.

1038 M.T. COMPANY, R.A.S.C.: TRIPOLI

(87th Auxiliary Petrol Company)

Capt. . . .	A/Capt.	P. G. Grinling, M.C.
Sub. (Works) .	Temp. 2nd Lieut.	R. G. Rees.
Sub. . . .	Temp. 2nd Lieut.	A. W. Scott.
Sub. . . .	Temp. 2nd Lieut.	F. H. J. Press.
Sub. . . .	Temp. 2nd Lieut.	H. A. Cheers.
Sub. . . .	Temp. 2nd Lieut.	E. H. Potter.
	Temp. Lieut.	G. H. Williams.

1039 M.T. COMPANY, R.A.S.C.: HOMS

(88th Auxiliary Petrol Company)

Capt. . . .	Capt.	R. J. O. Dowse.
	Temp. 2nd Lieut.	B. C. de W. Siffken.
Sub. (Works) .	Temp. 2nd Lieut.	T. J. Lee.
Sub. . . .	Temp. 2nd Lieut.	R. Mason.
Sub. . . .	Temp. 2nd Lieut.	H. E. Beney.
Sub. . . .	Temp. 2nd Lieut.	A. A. W. James.
Sub. . . .	Temp. Lieut.	F. W. Grundy.
	Temp. 2nd Lieut.	S. B. T. Jones.

1040 M.T. COMPANY, R.A.S.C.: CAIRO

(101st Auxiliary Petrol Company)

Capt. . . .	Temp. Capt.	S. P. Lowe.
Sub. (Works) .	Temp. Lieut.	K. W. Johnstone.
Sub. . . .	Temp. 2nd Lieut.	H. P. Bradley.
Sub. . . .	Temp. 2nd Lieut.	F. C. Pilling.
Sub. . . .	Temp. Lieut.	G. S. Pinnock.
Sub. . . .		

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1072 M.T. COMPANY, R.A.S.C.: KANTARA

(Attached 392nd Siege Battery)

Capt. . . .	A/Capt.	H. T. L. Young.
Sub. (Works) .	Temp. Lieut.	F. N. Oldroyd.
Sub. . . .	Temp. Lieut.	C. Campbell.

1073 M.T. COMPANY, R.A.S.C.: HAIFA

(Attached 394th Siege Battery, R.G.A.)

Capt. . . .	A/Capt.	G. B. Murray (T.F.).
Sub. (Works) .		A. Brookes.
Sub. . . .		P. S. Miliard.

MOTOR AMBULANCE TRANSPORT COMPANIES

No. 1 (Alexandria) 1078 M.T. Company, R.A.S.C., A/Capt. J. H. C. Faire, M.C.

No. 2 (Cairo) 1079 M.T. Company, R.A.S.C., Capt. C. E. Davis.

No. 3 (Kantara) 1080 M.T. Company, R.A.S.C., Temp. Capt. A. E. Nicholls.

MOBILE REPAIR UNITS (EGYPT), R.A.S.C.

No. 1 (Beirut) .	Sub.	Temp. 2nd Lieut.	N. Nairn.
No. 2 (Haifa) .	Sub.	Temp. 2nd Lieut.	A. G. Towersey.
No. 3 (Homs) .	Sub.	Temp. 2nd Lieut.	G. C. Winkfield.
No. 4 (Surafend) .	Sub.		
No. 5 (Cairo) .	Sub.	Temp. 2nd Lieut.	E. H. Williams.
No. 6 (Ludd) .	Sub.	Temp. Lieut.	J. Yule.
No. 7 (Kantara) .	Sub.		
No. 8 (Alexandria)	Sub.	Temp. 2nd Lieut.	W. Blake.
No. 9 (Ludd) .	Sub.	Temp. 2nd Lieut.	D. Kennedy.
No. 10 (Jerusalem)	Sub.	A/Capt.	W. G. Wallis.
No. 11 (Ludd) .	Sub.		
No. 12 (Alexandria)	Sub.	Temp. 2nd Lieut.	P. T. Jefferson.
No. 13 (Cairo) .	Sub.	Temp. Lieut.	H. J. G. Monro, M.C.
No. 14 (Cairo) .	Sub.		
No. 15 (Cairo) .	Sub.	Temp. Lieut.	W. H. Cromie.
No. 16 (Surafend).	Sub.	Temp. 2nd Lieut.	B. Sleath.

R.A.S.C. MOTOR-BOAT COMPANY: KANTARA

Major or Capt. .	Temp. Major		A. W. P. Noott.
	Capt.		J. A. Toop (T.F.).
Sub. (Works) .	Temp. Lieut.		W. S. Mackintosh (Dead Sea).
Sub. . . .	Temp. Lieut.		G. Proudfoot.
Sub . . .			

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WORKSHOPS—LIGHT ARMOURED CAR BRIGADE : SOLLUM

Capt. or Sub.	A/Capt.		R. Wyatt-Foulger, S.R.

OFFICER I/C OF MOTOR AMBULANCES OF CORPS

XXth Corps	Sub.	Temp. Lieut.	C. Wagstaffe.
XXIst Corps	Sub.	Temp. Lieut.	N. H. Constable.
Desert Mounted Corps.	Sub.	Temp. 2nd Lieut.	G. C. Purdue.

D.I., M.T., G.H.Q., 1ST ECHELON

Major . . .	Temp. Major	B. W. Nicholson, M.C.

INSPECTION STAFF

Capt. . . .	A/Capt.	C. Cambell.
Sub. . . .	Temp. 2nd Lieut.	A. McGarva.
	Temp. 2nd Lieut.	H. W. Halley.

O.C., A.S.C., COASTAL SECTION : SOLLUM

Major . . .	Temp. Major	J. M. Harby.

LOCAL RESOURCES BOARD : KHARTOUM

Major . . .	A/Major	H. Hunter (T.F.).

LOCAL DUTIES : CAIRO

Lieut.-Colonel .	O.C., A.S.C.	Lieut.-Col. (A.) W. G. Huskisson, D.S.O.
	Asst. to O.C., A.S.C.	Temp. Lieut. M. A. O'Meara.
Capt. . . .	O. i/c Barracks	Capt. J. D. Penrose (T.F.).
Sub. . . .		
Quartermaster .	O. i/c Barracks, Abbassieh.	Quartermaster and Capt. W. G. Cowling.
Quartermaster .	O. i/c Barracks, Kasr el Nil	Quartermaster and Capt. A. Nathan.

RAILWAY TRAFFIC OFFICE, R.A.S.C. : CAIRO

Capt. or Sub. .		Quartermaster and Capt. F. Foley.

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LOCAL DUTIES: ALEXANDRIA

Lieut.-Colonel	.	O.C., A.S.C.	Lieut.-Colonel E. Clarke, D.S.O. (T.F.).
		Asst. to O.C., A.S.C.	Temp. Lieut. G. C. Touche.
Captain	. .	O. i/c Barracks	
Capt.	. . .	O. i/c Supplies	
Sub.	. . .	O. i/c Transport	Temp. Capt. M. A. Waters.
Quartermaster	.	O. i/c Barracks	Quartermaster and Capt. F. W. Rook.

OFFICER IN CHARGE MILLS: DELTA FORCE

Capt.	. . .	Temp. Capt.	H. Chapman.

LOCAL RESOURCES BOARD: CAIRO

Major	. . .	A/Major	J. R. Herridge, M.C.
		Temp. Lieut.	P. T. Knowles.

CENTRAL ACCOUNTS OFFICE: CAIRO

Major	. . .	A/Major	R. H. Macqueen.
Capt.	. . .	Temp. Lieut.	C. D. Mucklow.
Sub.	. . .	Temp. 2nd Lieut.	P. C. A. Penney.
		A/Capt.	P. M. Dyer.
		A/Capt.	B. Bennion.

ATTACHED TO EGYPTIAN ARMY

Capt.	. . .	A/Capt.	J. K. Maurice, M.C.
Sub.	. . .	Temp. Lieut.	C. Wright.

BASE AND LANDING ESTABLISHMENT

Capt.	. . .	Temp. Lieut.	C. H. Hearth.

CYPRUS

Major	. . .	A/Major	L. A. S. Northcote (R.O.), O.C., R.A.S.C.
Major	. . .	Temp. Major	L. Sisman (R.O.).
Capt.	. . .	Capt.	H. W. Gilhespie (S.R.), O.C., M.T.
Capt.	. . .	Capt.	J. T. P. Clarke (T.F.).
		A/Capt.	A. D. Carmichael (T.F.).
		Temp. Capt.	W. Laugher, O. i/c Accounts.
Sub.	. . .	Temp. Lieut.	H. C. R. Cullen.
		Lieut.	D. A. Brown (T.F.).
Sub.	. . .	Temp. 2nd Lieut.	G. L. Walter.

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JERUSALEM

Staff-Capt. to Governor. A/Major C. H. Bourke (D.A.Q.M.G.).

ATTACHED TO R.E.

Temp. 2nd Lieut. . . R. T. Toogood.

PRISONERS-OF-WAR CAMPS, CAIRO, ETC.: COMMANDANT HAMA

Temp. Lieut. . . H. J. Gout.
Capt. . . . . R. A. Tougher.

A/A.P.M., HELIOPOLIS: HEADQUARTERS FORCE IN EGYPT

Temp. Lieut. . . J. T. Robinson.
Capt. . . . . A. J. Wells, M.C. (T.F.).

DUTY UNDER DIRECTOR OF REMOUNTS: L.P.O. DAMASCUS

A/Capt. . . . R. E. H. Crosbie.
Temp. Capt. . . A. J. Wadman, M.C.

COMMANDANT: HOMS

A/Capt. . . . B. M. C. Tyler, I.A.R.O.

SUPPLIES CONTROL BOARD, CAIRO

A/Capt. . , . R. S. Sennitt.

COTTON SEED CONTROL BOARD

Temp. 2nd Lieut. . . H. G. McLaren.

O.E.T.A.

A.A.G.	. .	Temp. Lieut.-Col.	G. K. Crichton, M.C.
Staff Capt.	. .	A/Capt.	W. L. Mason (T.F.).
Staff Lieut.	. .	Temp. Captain	R. A. Harari.
Staff Lieut.	. .	Temp. Captain	G. MacLaren (Deputy Governor of Hebron).
Staff Lieut.	. .	Temp. Capt.	A. J. Flynn (Staff, Tulkeram).
		A/Major	G. R. Tadman, M.C.

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A/Capt.	M. Bailey.
A/Capt.	L. Andrews.
A/Capt.	G. B. Trouncer.
Temp. Capt.	F. G. Lowick.
Temp. Capt.	J. Williamson, M.C.
Temp. Lieut.	H. O. Bennett.
Temp. Lieut.	N. de M. Bentwich, M.C.
Lieut.	E. J. Howes (T.F.).
Temp. Lieut.	J. G. Ross.
Temp. Lieut.	W. Mackfee (Resident Magistrate, Jerusalem).
Temp. 2nd Lieut.	A. H. Jacobs, Food Controller.
Temp. 2nd Lieut.	M. J. Jacobs.

ARAB BUREAU

D.A.Q.M.G. (Cairo)	Major	W. Wordie (T.F.).
Capt. (Jedda)	A/Capt.	H. G. Fox.
Sub. (Hedjaz)	Temp. 2nd Lieut.	G. J. D. Rochford.

ATTACHED INTELLIGENCE

Temp. 2nd Lieut. R. F. J. Strange.

ATTACHED ROYAL AIR FORCE

Temp. Capt.	L. McN. Hewitt.
Temp. 2nd Lieut.	H. J. T. Russell.
Temp. Lieut.	J. S. Robson.
Temp. Lieut.	A. J. Marchmont.
Temp. 2nd Lieut.	A. H. L. Thomson.
Temp. 2nd Lieut.	A. D. Crowther.
Temp. 2nd Lieut.	A. H. Bull.
Temp. 2nd Lieut.	A. H. Tandy.
Temp. 2nd Lieut.	F. C. H. Katon.

TRANSPORTATION SECTION

M.F.O.	A/Capt.	D. P. Malyn.
D.A.D.R.T.	A/Major	N. J. McOwan.

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CAMEL TRANSPORT CORPS

HEADQUARTERS

Inspector . .	Colonel	C. H. Whittingham, C.M.G., D.S.O. (R. of O.).
Adjutant . .	Temp. 2nd Lieut.	H. B. Smith.

DEPUTY INSPECTORS

1st Echelon . .	A/Major	R. H. Marten.
Desert Mounted Corps . .	A/Major	J. L. Swallow (T.F.).
2nd Echelon .	Temp. Major	L. Buckland.
20th Corps . .	A/Major	W. R. Lucas, D.S.O. (T.F.) (attached No. 1 Depot).
21st Corps . .	A/Major	T. E. Bayne-Jardine, D.S.O.

DONKEYS

Major . . .	A/Major	R. M. Gent, M.C.

WESTERN FORCE DETACHMENT

Sub. . . .	Temp. Lieut.	W. Lucas (Sollum).
Sub. . . .	Lieut.	E. Waterhouse (T.F.) (Matruh).

21ST CORPS TROOPS CAMEL DETACHMENT

Sub. . . .	Temp. 2nd Lieut.	G. L. Gay.

A.D.V.S. TO CAMEL TRANSPORT CORPS

Lieut.-Colonel .	A/Lieut.-Colonel	A. de R. Gordon, D.S.O.

NO. 1 DEPOT, CAMEL TRANSPORT CORPS: KANTARA

O.C. (Acting D.I.)	Temp. Major	C. Des Clayes.
Adjutant . .	Temp. Lieut.	P. Keith.
Quartermaster .	Temp. 2nd Lieut.	H. B. Denton.
Section Officer .	Temp. 2nd Lieut.	L. V. I. Syzmonski Lubicz.
Section Officer .	Temp. 2nd Lieut.	B. A. Giles.
Section Officer .		
Section Officer .		
Section Officer .		
Section Officer .		

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Temp. Lieut. . . W. W. Gargill.
Temp. 2nd Lieut. . . G. C. P. Woodley.
Temp. Lieut. . . J. F. Roe.
Temp. 2nd Lieut. . . R. E. Henry
Temp. 2nd Lieut. . . G. A. B. Gottlieb.
Temp. 2nd Lieut. . . W. H. Crocker.
Temp. 2nd Lieut. . . T. Elliot.
Temp. Lieut. . . H. E. McCollough.
Temp. 2nd Lieut. . . W. B. Trulock.
Temp. Lieut. . . A. R. L. Jameson.
A/Capt. . . . W. C. K. Bloomer (T.F.).
Temp. 2nd Lieut. . . G. R. Hayward.
Temp. 2nd Lieut. . . G. N. Borland.
Temp. 2nd Lieut. . . R. O. Taylor.
Temp. Lieut. . . J. Hamilton, M.C.
Temp. 2nd Lieut. . . F. A. Cooper.
Temp. 2nd Lieut. . . W. R. Cunningham.
Temp. Lieut. . . F. Cook (T.F.).
Temp. 2nd Lieut. . . E. Cree.

ON LEAVE OUT OF EGYPT

Temp. 2nd Lieut. . . J. H. Anderson.
Temp. Lieut. . . G. D. Day.
Temp. 2nd Lieut. . . C. G. Bedford.
Temp. 2nd Lieut. . . — Clarke.

CAMEL TRANSPORT CORPS OFFICERS IN HOSPITAL

A/Capt. . . . H. Ebsworth.
Temp. 2nd Lieut. . . F. J. Willson.
Temp. Capt. . . G. N. Hillier.
A/Major . . . G. A. Marshall.
Temp. Capt. . . A. R. Hinde.
Temp. 2nd Lieut. . . R. A. Edgar.
Temp. 2nd Lieut. . . J. Gandy.
Temp. 2nd Lieut. . . S. J. Sheldon.
Temp. 2nd Lieut. . . C. R. G. Livock.
Temp. 2nd Lieut. . . F. B. Taylor.
Temp. 2nd Lieut. . . E. J. Baxter.
Temp. 2nd Lieut. . . W. S. Foden.
Temp. 2nd Lieut. . . M. Steigrad.
Temp. Lieut. . . H. H. Selley
Temp. 2nd Lieut. . . L. Bassan.

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Temp. 2nd Lieut. .	R. Stenton.
Lieut. . . .	A. P. P. Tompkins (T.F.).
Temp. 2nd Lieut.	E. Seeman.
Temp. 2nd Lieut. .	F. M. Woods.
Temp. 2nd Lieut. .	C. T. Vine.
Temp. 2nd Lieut. .	H. T. Whittaker.
Temp. Lieut. .	H. B. Davison.
Temp. 2nd Lieut. .	A. H. Bradley.
Temp. 2nd Lieut. .	C. F. Heney.
Temp. 2nd Lieut. .	J. Mair.
Temp. 2nd Lieut. .	W. D. Williams.

NO. 2 DEPOT, CAMEL TRANSPORT CORPS: CAIRO

O.C. (Deputy Inspector)	A/Lieut.-Colonel	W. E. Peel, D.S.O.
Adjutant . .	Quartermaster and Capt.	F. Moore.
Quartermaster .	Temp. Quartermaster and Lieut.	E. S. Smith.
Section Officer .	Quartermaster and Capt.	H. Elsley.
Section Officer .	Temp. 2nd Lieut.	E. Nicholls (attached 804 A. E. Company).
Section Officer .	Temp. Lieut.	A. Clark.
Section Officer .		

ATTACHED

Temp. Lieut. . .	F. Bush.
Temp. 2nd Lieut. . .	C. R. Jenkinson.
A/Capt. . . .	F. R. Pitman.
Temp. Quartermaster and Lieut. . .	A. Hanauer, M.C.

A COMPANY, C.T.C.

O.C. (Major or Capt.)	Temp. Capt.	T. Parsonage, M.C.
Adjutant . .		
Quartermaster .	Temp. 2nd Lieut.	H. Biggs.
Section Officer .	Temp. 2nd Lieut.	L. D. Price.
Section Officer .	Temp. 2nd Lieut.	W. H. Mather.
Section Officer .	Temp. 2nd Lieut.	R. P. Goodbody.
Section Officer .	Temp. 2nd Lieut.	G. Collier.
Section Officer .	Temp. 2nd Lieut.	W. H. Baker.
Section Officer .		

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B COMPANY, C.T.C.

O.C. (Major or Capt.)	A/Capt.	T. E. Houghton.
Adjutant . .	A/Capt.	P. G. Ranahan.
Quartermaster .		
Section Officer .	Temp. 2nd Lieut.	C. Pern.
Section Officer .	Temp. 2nd Lieut.	H. R. Hughes.
Section Officer .	Lieut.	D. S. Thomson (T.F.).
Section Officer .	Temp. 2nd Lieut.	L. Archdale.
Section Officer .		
Section Officer .		

C COMPANY, C.T.C.

O.C. (Major or Capt.)	A/Capt.	A. Walker (T.F.).
Adjutant . .	A/Capt.	T. C. Milne.
Quartermaster .	Temp. 2nd Lieut.	H. D. Salt.
Section Officer .	Temp. 2nd Lieut.	T. Brooks.
Section Officer .	Temp. 2nd Lieut.	A. L. Westbrook.
Section Officer .	Temp. 2nd Lieut.	J. Maunder.
Section Officer .	Temp. 2nd Lieut.	C. V. Miles.
Section Officer .		
Section Officer .		

D COMPANY, C.T.C.

O.C. (Major or Capt.)	A/Major	C. la T. Foster.
Adjutant . .	A/Capt.	L. B. Davis.
Quartermaster .	Temp. 2nd Lieut.	A. H. Hoar.
Section Officer .	Temp. 2nd Lieut.	W. J. McAlpine.
Section Officer .	Temp. 2nd Lieut.	P. W. Miller.
Section Officer .	Temp. Lieut.	T. P. Finn.
Section Officer .	Temp. Lieut.	L. Brashaw.
Section Officer .	Temp. 2nd Lieut.	G. S. Willcox.
Section Officer .	Temp. 2nd Lieut.	S. G. Abbey.

E COMPANY, C.T.C.

O.C. (Major or Capt.)	A/Capt.	H. McMurdie.
Adjutant . .	A/Capt.	S. I. Gordon.
Quartermaster .	Temp. 2nd Lieut.	T. E. Humphrey.
Section Officer .	Temp. 2nd Lieut.	A. H. Bugler.
Section Officer .	Temp. 2nd Lieut.	E. Goldman.
Section Officer .	Temp. 2nd Lieut.	H. W. Cummin.
Section Officer .	Temp. 2nd Lieut.	E. H. Spowers.
Section Officer .	Temp. 2nd Lieut.	G. A. Thompson.
Section Officer .		

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F COMPANY, C.T.C.

O.C. (Major or Capt.)	A/Capt.	W. L. Dawson.
Adjutant . .	Temp. 2nd Lieut.	G. Skuse.
Quartermaster .	Temp. 2nd Lieut.	H. I. Bell.
Section Officer .	Temp. Lieut.	R. Ainsworth.
Section Officer .	Temp. 2nd Lieut.	H. A. Goodall.
Section Officer .	Temp. 2nd Lieut.	T. McL. Sharpe.
Section Officer .	2nd Lieut.	A. H. Sapsed (Sherwood Rangers).
Section Officer .	Temp. 2nd Lieut.	E. Thompson.
Section Officer .	Temp. Lieut.	F. D. Peacock.

G COMPANY, C.T.C.

O.C. (Major or Capt.)	A/Major	P. B. Deas (T.F.).
Adjutant . .	A/Captain	J. C. Wooller.
Quartermaster .		
Section Officer .	Temp. Lieut.	F. M. Edward.
Section Officer .	Temp. 2nd Lieut.	J. E. Fielden.
Section Officer .	Temp. 2nd Lieut.	G. C. Dawes.
Section Officer .	Temp. 2nd Lieut.	E. J. H. Mackay.
Section Officer .	Lieut.	H. L. Trotter (T.F.).
Section Officer .		

H COMPANY, C.T.C.

O.C. (Major or Capt.)	A/Major	A. E. J. Riley (T.F.).
Adjutant . .	Temp. Lieut.	L. E. Feaver.
Quartermaster .	Temp. 2nd Lieut.	G. F. Tullidge.
Section Officer .	Temp. 2nd Lieut.	R. Hammond.
Section Officer .	Temp. 2nd Lieut.	W. H. Johnstone.
Section Officer .	Temp. Lieut.	A. J. Keay.
Section Officer .	Temp. Lieut.	F. Turner.
Section Officer .		
Section Officer .		

K COMPANY, C.T.C.

O.C. (Major or Capt.)	A/Major	A. Scragg, M.C.
Adjutant . .	A/Capt.	T. E. D. Reece.
Quartermaster .	Temp. 2nd Lieut.	G. H. Day.
Section Officer .	Temp. Lieut.	C. J. Wood.
Section Officer .	Temp. 2nd Lieut.	D. E. Seton.
Section Officer .		
Section Officer .		
Section Officer .		
Section Officer .		

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L COMPANY, C.T.C.

O.C. (Major or Capt.)		
Adjutant . .	A/Capt.	E. Lee.
Quartermaster .	Temp. 2nd Lieut.	R. P. Kerr.
Section Officer .	Temp. 2nd Lieut.	M. F. Bolding.
Section Officer .	Lieut.	S. H. Wilmot.
Section Officer .	Temp. 2nd Lieut.	R. P. Field.
Section Officer .	Temp. 2nd Lieut.	R. Hunt.
Section Officer .		
Section Officer .		

M COMPANY, C.T.C.

O.C. (Major or Capt.)	A/Capt.	E. A. Stumm.
Adjutant . .	2nd Lieut.	J. H. Dibley.
Quartermaster .	Temp. 2nd Lieut.	W. J. Wood.
Section Officer .	Lieut.	C. H. Birch.
Section Officer .	Temp. 2nd Lieut.	C. H. Dempster.
Section Officer .	Temp. 2nd Lieut.	H. V. Poole.
Section Officer .	Temp. 2nd Lieut.	C. R. Jenkinson.
Section Officer .	Temp. 2nd Lieut.	B. Cooper.
Section Officer .		

N COMPANY, C.T.C.

O.C. (Major or Capt.)	A/Capt.	C. F. Cowper.
Adjutant . .	A/Capt.	H. F. Hebb.
Quartermaster .		
Section Officer .	Temp. 2nd Lieut.	F. G. Joslin.
Section Officer .	Temp. 2nd Lieut.	F. G. Wayman.
Section Officer .	Temp. 2nd Lieut.	J. L. Mather.
Section Officer .	Temp. 2nd Lieut.	R. Brightman.
Section Officer .	Temp. 2nd Lieut.	G. Nathan.
Section Officer .	Temp. 2nd Lieut.	L. Freeth.

O COMPANY, C.T.C.

O.C. (Major or Capt.)	A/Capt.	G. H. M. Berry.
Adjutant . .	A/Capt.	F. G. Alford.
Quartermaster .	Temp. Lieut.	H. L. Kidd.
Section Officer .	Temp. Lieut.	J. M. M. Lawson.
Section Officer .	Temp. 2nd Lieut.	R. C. Easterbrook.
Section Officer .	Temp. 2nd Lieut.	W. J. Wesson.
Section Officer .	Temp. 2nd Lieut.	T. S. Dawson.
Section Officer .	Temp. 2nd Lieut.	W. B. S. Powell.

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P COMPANY, C.T.C.

O.C. (Major or Capt.)	Capt.	R. A. Long.
Adjutant .		
Quartermaster .	Temp. 2nd Lieut.	J. D. Scott.
Section Officer .	Temp. 2nd Lieut.	E. A. U. Coxen.
Section Officer .	Temp. Lieut.	F. Gunn.
Section Officer .	Temp. 2nd Lieut.	T. J. Mumford.
Section Officer .		
Section Officer .		
Section Officer .		

Q COMPANY, C.T.C.

O.C. (Major or Capt.)	A/Capt.	J. C. Sidley.
Adjutant . .	Temp. 2nd Lieut.	G. F. Holmes.
Quartermaster .	Temp. 2nd Lieut.	F. G. Jones.
Section Officer .	Temp. 2nd Lieut.	A. T. Vaughan.
Section Officer .	Temp. 2nd Lieut.	A. T. Martin.
Section Officer .	Temp. 2nd Lieut.	R. Papps.
Section Officer .	Temp. Lieut.	W. Picken.
Section Officer .		
Section Officer .		

R COMPANY, C.T.C.

O.C. (Major or Capt.)		
Adjutant . .	A/Capt.	F. R. Aldercotte.
Quartermaster .	Temp. 2nd Lieut.	A. S. Grindle.
Section Officer .	Temp. 2nd Lieut.	R. F. Ecclestone.
Section Officer .	Temp. 2nd Lieut.	W. Stewart.
Section Officer .	Temp. 2nd Lieut.	H. J. Pearce.
Section Officer .		
Section Officer .		
Section Officer .		

S COMPANY, C.T.C.

O.C. (Major or Capt.)	Temp. Capt.	W. McClure.
Adjutant . .	A/Capt.	M. L. Alsop (T.F.).
Quartermaster .	Temp. Lieut.	F. G. Y. Knowles.
Section Officer .	Temp. 2nd Lieut.	W. Macphee.
Section Officer .	Temp. Lieut.	M. H. Vickerman.
Section Officer .	Temp. 2nd Lieut.	R. A. Goulding.
Section Officer .	Temp. 2nd Lieut.	W. A. Cooper.
Section Officer. .		
Section Officer .		

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T COMPANY, C.T.C.

O.C. (Major or Capt.)	Temp. Capt.	A. Crompton.
Adjutant . .	A/Capt.	J. B. Andrews.
Quartermaster .	Temp. 2nd Lieut.	S. W. Keeble.
Section Officer .	Temp. 2nd Lieut.	N. Goodbody.
Section Officer .		
Section Officer .		
Section Officer .		
Section Officer .		
Section Officer .		

U COMPANY, C.T.C.

O.C. (Major or Capt.)	A/Capt.	B. T. Hinchley.
Adjutant . .	Temp. Lieut.	W. M. Hannaford.
Quartermaster .	Temp. 2nd Lieut.	A. T. Q. Bluett.
Section Officer .	Temp. 2nd Lieut.	T. Geddes.
Section Officer .	Temp. 2nd Lieut.	G. H. Drain.
Section Officer .	Temp. Lieut.	P. A. McKeand.
Section Officer .	Temp. 2nd Lieut.	C. C. Barnes.
Section Officer .		
Section Officer .		

V COMPANY, C.T.C.

O.C. (Major or Capt.)	A/Capt.	D. A. C. Keane, M.C.
Adjutant . .	A/Capt.	F. S. T. Cooper (T.F.).
Quartermaster .	Temp. 2nd Lieut.	J. S. Henderson.
Section Officer .	Temp. 2nd Lieut.	R. Platt.
Section Officer .	Temp. 2nd Lieut.	W. B. Boyle.
Section Officer .	Temp. 2nd Lieut.	N. Thorne.
Section Officer .	Temp. 2nd Lieut.	T. Walker.
Section Officer .	Temp. 2nd Lieut.	J. Jellicoe.
Section Officer .	Temp. 2nd Lieut.	H. G. C. Spence.

NO. 1 DONKEY TRANSPORT COMPANY

O.C. (Capt.) .		
Adjutant . .	Temp. 2nd Lieut.	J. D. Dalrymple.
Quartermaster .	Temp. 2nd Lieut.	R. Mighall.
Section Officer .	Temp. 2nd Lieut.	R. F. E. Henwood.
Section Officer .	Temp. 2nd Lieut.	J. W. John.
Section Officer .		
Section Officer .		

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NO. 2 DONKEY TRANSPORT COMPANY

O.C. (Capt.)	A/Capt.	A. W. Allsworth.
Adjutant		
Quartermaster	Temp. 2nd Lieut.	W. R. Price.
Section Officer	Temp. 2nd Lieut.	W. F. Rodgers.
Section Officer	Temp. 2nd Lieut.	H. T. P. Stephenson.
Section Officer		
Section Officer		

NO. 3 DONKEY TRANSPORT COMPANY

O.C. (Capt.)	A/Capt.	S. H. Ramsey.
Adjutant	A/Capt.	S. Kesley.
Quartermaster	Temp. 2nd Lieut.	A. W. Lewis.
Section Officer	Temp. 2nd Lieut.	F. M. Day.
Section Officer	Temp. Lieut.	A. G. Cox.
Section Officer	Temp. 2nd Lieut.	F. J. Holmes.
Section Officer	Temp. 2nd Lieut.	F. Castle.

NO. 4 DONKEY TRANSPORT COMPANY

O.C. (Capt.)	A/Capt.	F. H. Hayles.
Adjutant	A/Capt.	J. E. Anderson.
Quartermaster	Temp. 2nd Lieut.	B. C. Thomasset
Section Officer	Temp. 2nd Lieut.	E. G. Hyatt.
Section Officer	Temp. 2nd Lieut.	A. S. Muirhead.
Section Officer	Temp. 2nd Lieut.	W. E. Parnell.
Section Officer		

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Printed in Great Britain by Hazell, Watson & Viney, Ld., London and Aylesbury

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